

Genl. Waverley

THE
NAVY-SURGEON:
OR, A
Practical SYSTEM
OF
SURGERY.

ILLUSTRATED

With OBSERVATIONS on such remarkable
CASES as have occurred to the AUTHOR'S
Practice in the Service of the ROYAL NAVY.

To which is added,

A TREATISE on the VENEREAL DISEASE,
the Causes, Symptoms, and Method of Cure by
Mercury: An Enquiry into the Origin of that Dis-
temper; in which the Dispute between Dr. *Dover*,
and Dr. *Turner*, concerning *Crude Mercury*, is fully
consider'd; with Useful Remarks thereon.

A L S O

An APPENDIX,

Containing *Physical Observations* on the Heat,
Moisture, and Density of the Air on the Coast of
Guinea; the Colour of the Natives; the Sicknasses
which they and the *Europeans* trading thither are
subject to; with a Method of Cure.

By JOHN ATKINS SURGEON.

Quam quisque nōrit artem in hac se exerceat.

K

CICERO.

L O N D O N:

Printed for CESAR WARD and RICHARD CHANDLER,
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T O

My Worthy and Ingenious Friend

ROBERT ROBINSON, Esq;
of *Lincoln's-Inn*,

RECORDER of *Scarborough*;

The following

T R E A T I S E

Is Dedicated

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His most Obliged,

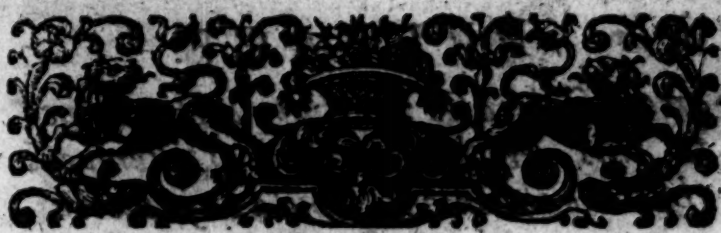
Humble Servant,

JOHN ATKINS.

Forrest Robinson, Esq.
of America
Recorder of
The Court



JOHN ARTHUR



THE
PREFACE.



TRADE and Luxury has introduced many Distempers among Mankind, which the religious Temperance of former Ages was unacquainted with, and subjected them more frequently to others. A Refinement on Taste and Diet has helped on an Addition of Evils, that shorten Life, and lessen the Pleasures of it. The Dietetick Part of Medicine, (as now in Countries where Physick is not so well known,) was chiefly regarded for the Conservation of Health, which at most stood only improved with the additional Experience of a few Herbs, and the Analogy they found
A 3 *among*

*among Diseases ; perhaps a Reverence to this Method in those Distempers that are chronical, would be judicious, even now ; because a Regard to Diet and the other Non-Naturals *, operate better, and with more Certainty, towards the Restoration of Health, than the various and intricate Prescriptions of Physick, which modishly administered, serve often to little other Purpose, than making a well Stomach sick, and a sick Stomach worse.*

Surgery seems to have the Pre-eminence of all Branches in the Art of Physick, both in respect to Antiquity and Usefulness ; the first I imagine from the Wounding of Abel, and those stubborn Ulcers anciently called Chyronia ; the other is evident from the Benefits that visibly flow thence, compared with the
Uncer-

* They are six, and so called, because they are neither of, nor against Man's Nature ; and yet without their Use, human Life cannot subsist : In the Quantity, Quality, Manner, and Time of using them, consists the Method, in a very great Measure, of preserving or restoring Health.

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Uncertainty of inward Administration: Patients are often irretrievable without the former; but the other is built on such precarious Reasoning and Consequence, that, considered from Surgery, it is a Question, whether all the Loads that are swallowed in London diminish their Bills of Mortality a single Person in a Year. Fashion authorizes; and it is but reasonable that Gentlemen of Learning in the Science should be rewarded, if it were only for keeping so enormous a Catalogue from doing Harm, and for a graceful Compliance with the Pride, the Follies, and Fears of Mankind: This I mean only as to the Largeness of it; which brings me to a Word or two on that Compass we sail by.

The Navy is supplied with Medicines under the Direction of the Apothecaries Company and a Physician; who put up not what the Surgeon wants, but what they say he wants; the Invoices being fixed, in which the

most commendable Part is the Reduction of Number, (not one twentieth Part perhaps of the Catalogue in Dispensatories;) which I think could not be done, without Uncharitableness, (especially to Hospitals supported at a publick Charge,) unless this Multiplicity in Practice were tacitly allowed a just Complaint, and the other nineteen granted to be useless, or, which is much the same Thing, like Marygolds in Porridge. I think the Invoices might be still usefully diminished, or at least a better Change made in them: Electuaries, Conservees, Syrups, Herbs, Roots, Flowers, and the like, quickly decay in warm Climates, and as most of them can be substituted, or the Country (unless unblest) has something equivalent, all large Quantities are Impositions; other Medicines, again, from our not knowing what they are good for, or their being of little Esteem must either be given, like many eminent Prescriptions, without any Meaning, or kept covered till the Chest returns,

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returns, and then thrown away; a convincing Evidence I think of the Mistake in reducing every Man's Understanding to one Size in Practice; and that the Surgeon ought to have a considerable Share in the Choice and Quantity to be taken on board. Besides this Slights on his Judgment here, there is a worse on his Honesty; for the precious Ointments now all sealed up, he himself is made the Messenger of carrying the Key enclosed to his Commander; and this (recommendatory Method) only on the bare Possibility of his being so silly a Knave as to theefe from himself, and just at this Time; a Proof, among others, of that Oeconomy and Vertue said to subsist both in Offices and Officers.

What I have said of Multiplicity of Medicine, may, perhaps, be objected as my own Fault in the following Tract. To which I ingenuously reply, There has been a Compliance with Custom in the Number of Receipts, and that one tenth Part, properly adapted,

would answer as useful Purposes as the Whole; Physick, as it relates to Surgery, being, in my Opinion, neither so very ample or mysterious: It lies chiefly in knowing the different Secretions of the Body, whether too copious or defective, and which, (one or more,) either by promoting or stopping, will best serve the End and Intention aimed at in alleviating Nature from the Pains and Accidents she is (in chyrurgical Cases) incident to; and the timely Use of them. So that separating Medicines that have a sensible Operation, Opiates, Restrictives, and Cardiacks, we seem to have the Whole for Use; and, perhaps, if we add two or three Specificks, and a thorough Knowledge in the Non-Naturals, we have all of Physick that is useful in other Cases.

Anatomical Skill is more the Surgeon's Part; Practice without this being lame and imperfect; for by this he judges what principal Bowel (if in the Cavity) is wounded, or what
Acci-

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Accidents may probably be expected from such and such Hurts, the dissimilar Parts are liable to: By this, and the Knowledge of their Nature, Constitution, Use, and Action, he applies Remedies timely and properly, and makes sure Prognostick; but without it, is not safe in any Operation.

To apply both: As Anatomy teaches what Part is hurt, so Physick instructs how the Symptoms peculiar to any are excited, and reasons and directs accordingly: They seem so far inseparable Qualifications; and as the Surgeon is deficient in the one or the other, he must be proportionably unskilful. But still Experience seems superior to both; or, more properly, Physick bottomed on Experience. I cannot conceive how the Wounding a Nerve or Tendon should excite a Convulsion; nor how that, or any other distant Accident should propagate such Convulsions through the human System, any sooner than touching a Vein or Artery: I cannot under-

understand how Mercury divided to Imperceptibility, either in Powder or Pill, will mix effectually with the Mass of Blood, and produce a Salivation; when Crude Mercury swallowed in fifty Times the Quantity, has no such Effect: Neither do I know why Opiates, Catharticks, or other Class of Medicines, should constantly, or for the most Part, operate to their Denominations. But from Experience I know both the one and the other to be fact; and from the same Experience can make tolerable, often certain Prognostick as to the Consequences. So that my Reasoning and Theory herein, comes after the Trial to confirm, or rather amuse the Understanding, both as to the Manner of Production, and Choice of Remedy; which is now this, now that, just as Humour and Fashion alters: Evident in the vast Variety of Prescription and Hypotheses, and they changeable. From whence I would deduce,

First,

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First, That it is exceeding difficult, if not impossible, to attain any competent Knowledge in Physick without Practice; the Bulk of it we see is a Repetition of Experiments, and Observations on the Effects of Medicines at different Times, and in different Constitutions and Climates; from whence are drawn Conclusions of more real Service in the Art, than mathematical Theorems and Corollaries, especially in this Branch of Surgery: How should the Theorist know which way to manage a Fracture, Amputation, or other Operation? when it is sensible Instruction that makes the Artist? Nemo legendo solum fit artifex.

Secondly, To talk in general on the Nature of Fluids, Solids, and making mechanical Supputations of their Motion and Strength, is not a tenth Part so instructive; or will it tend to relieve a Patient so well in any Chirurgical Case, as being acquainted with Practice, and the Management and seasonable Change of Applications that have been tried and warranted:
For

For let the Knowledge of Nature be never so extensive, that is best which can be justified from Facts; and it is the particular Case here, added to what we have seen of the like Kind before, that best directs our Judgment in Choice of Remedy, and Process for Relief.

Thirdly, Though Hospitals confirm the Experienced, and particular Operations may have their Favourites, yet for the common and general Parts of Surgery, (recent Cases,) I know no better School to improve in, than the NAVY, especially in Time of War, Accidents are frequent, and the Industrious illustrate Practice by their Cures. To those Gentlemen, therefore, I have more particularly aimed the Intention of my Writings, have dwelt only on such Subjects as are most common, and summed up Processes under each Head, in as concise a Manner as would consist with Pertinency and Information: If instructive, I shall have their Approbation for being short; and if not, this pleads more favourably my Excuse.

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CHAP. I.

Of FRACTURES in General.

FRACTURES are some of the most common Cases in Surgery, especially in Time of War; yet have been hitherto but superficially handled, as though the Cure of them required but little Skill, or was not liable to any extraordinary Accidents.

The following Remarks are designed for supplying this Deficiency, and took their Rise from that excellent Order in the Navy, of Surgeons keeping Journals of their Practice; an Order that seemed at first design'd to give Preference to Mens Qualifications; but at present has no other View in it, (either by the Physician, or the Hall,) than retaining some little and inconsiderable Fees, that are a Reproach to both.

I have altered the common Way of Process, where I thought it reasonable to do so, and have chiefly insisted on the Rise and Nature of the attending Symptoms; which, as in my Judgment, they proceed from the Managing and Treatment of Fractures directly, have from thence their safest and best Remedy.

B

Fractures

2 *Of Fractures in General.*

Fractures are either,
Division of I. Simple, which are defined by
Fractures. Authors, a Solution of Continuity
 in the Bone; and, in respect of Fi-
 gure, may be Oblique, Transverse, or Longi-
 tudinal: Or,

II. Compound, when the *Cuticula* is broke through by the End of the Bone thrusting outwards, or by Wounds made to it; but may properly also have that Appellation, where there happens a double Solution of the same Bone, or is accompanied with a Luxation.

SECT. I. *Of SIMPLE FRACTURES.*

Causes. Some reckon a Fracture may be produced from an internal, as well as an external Cause: The former is alledged from some Examples in the *Lues* and *Scurvy*, where the Blood has been found degenerated to such a Degree, as to corrode the Bone, or consume it, in the same Nature as Consumptions are observed to do the fleshy Parts. I have seen a Thigh-Bone emaciated to half the Bigness of its Fellow, and a Jaw-Bone not above one Third of its natural Bigness. And there is an Instance in the *Biblioth. Chirurg.* from *Dominique Gayliard*, of the Bones all turning cartilaginous. But yet none of these are properly brought under the Species of a Fracture; at least they require a very wide and different Process from those externally occasioned; and therefore out of our present Enquiry.

But

Of Fractures in General. 3

But external Causes are evident and common; such as Blows, Falls, Pressure, Wrenches, or Gunshot; and in my Opinion, one or other of these must always concur to disunite the Continuity of a Bone, and make a Fracture. There is one rare and extraordinary Cause of this kind; and that is, a violent Contraction of the Muscles. This, Mr. Douglas, in his Lectures of Osteology, instanced to be true in two Cases there shewn: One, of a Porter that fractur'd a transverse Process of the *Vertebra*, by stepping over a Kennel with a Burthen; and another, that broke the *Os Humeri* by slinging a Stone.

Those by external Accidents the commonest in Practice.

Fractures happen best in middle aged People; very young, or old Folks, have each their Inconveniencies: In the first, a Quickness of Circulation and Sensation makes the Pain more acute, and subjects them in the Beginning to a Fever, and its Consequents; and in the Progress, too liberal a Supply of Nourishment makes the Fracture more obnoxious to a Deformity, or bunching out. In old People, the Reverse of this; for in them, the Bones having arrived at their utmost Extent and Solidity, grow dry, and the Vessels importing Nourishment, being almost obliterated, there is always a Defect in the Generation of *Callus*. A Fracture may be likewise said to happen best, when the Solution is but in one Place, when it is not near a *Joint*; and when it happens where there are two Bones, and only one of them broke, (as in the Cubit or Leg)

To what Age, and in what Part they happen best.

4 *Of Fractures in General*

a Limb requiring less Art then, either to reduce or preserve it so; because the Firmness of that Bone which remains whole, facilitates the Work: Nor is this commonly subject to so severe Symptoms, as where the Bone is single, (such as the Arm or Thigh,) but especially the last; because here the Muscles being large, the Limb cumbrous and more exposed, the Prevention of Accidents, and a good Conformity, are more particularly owing to Care and Art.

Fractures are also better in the Arm, than Thigh or Leg; because the Position of the inferior Limbs is more disadvantageous and uneasy, and the Quiet of them necessarily more liable to be disturb'd.

Among what are reckoned
 Signs of a Frac- Signs of a Fracture, I can se-
 ture. perate but two, peculiarly so.

The first is a sudden Impotency and Inaptitude of the Limb to move itself, which will immediately succeed a Solution of Unity: For Bones being the Prop and Foundation of Motion, it follows, that the Muscles inserted into them must be necessarily rendered useless: But then it is an Error of those who expect the Parts distant should be under the same Incapacity; such I mean, as moving the Toes on a Fracture of the Leg or Thigh, or Fingers in that of the Arm or Cubit; for let those Bones be never so shattered, it will not destroy the Motion of these, because they imply no Disturbance to the Fracture; which, though it *affects all the Joints above*, does only *deprive the next below it*. The second, and infallible Sign of a Fracture, is, when on
 handling

Of Fractures in General. 5

handling the Limb, we feel the Ends of the Bone to crush and pass by one another, without Stability to resist any Motion which is made with it ; and of this, unless we have lost our Feeling, we can hardly be deceived ; it is so much depended on, that without it, neither Pain, Tumor, Distortion, Shortness of the Limb, or any Disparity with the sound one, (though reckoned Symptoms of a Fracture,) are sufficient Indications of themselves, because they all severally do happen to the Limbs on other Accidents, and, in their Turns, may be separate Distempers of them.

A Fracture being known, the Cure of it lies principally in the Treatment of the Part itself. The Method I propose for it, I shall reduce to two general Heads ; viz. First, the *reducing the fractured Ends of the Bone*. And, Secondly, the *preventing or correcting Accidents*. These, and these only, are principal Intentions of Cure ; the duly compassing of which require other subsequent ones, which contribute a large Share to good Reposition, Quiet, and Ease of the Limb.

By *Reduction*, is meant the smooth and even Reposition of the Ends of the fractured Bone ; and is always to be done as soon as possible, to prevent the Pain, Tumor, and Inflammation that may be expected, and which will certainly follow, if it is deferred too long.

Intentions of Cure, principally two.

First Intention of Cure, is Reduction.

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In order to this, *Extension* is absolutely necessary to restore the Distortion of *Extension*. the Member to its natural Conformity; and is best done with your Hands, both because as great an *Extension* may be made with them, as any Fracture can require, and also because the Violence of any other Instrument might help on those ill Accidents which it should be our Care to prevent. This is performed by placing two Assistants, the one above, the other below the Fracture; the Business of the first is to hold the Limb steady, and at the same Time to make such a *Contra-Extension*, as may hinder its giving way to the greater *Extension* that must be made below, by which the Business of Reduction is chiefly to be compleated. This latter Part should be strong, gradual, and steady; and when your self, by feeling, shall find it made to a Degree fit for rejoining, you are by the Application of your Hands, to press and replace the Ends of the Bone *smooth and even*. And take this parti-

cular Notice with you, That it is *Coaptation*. your Feeling now that must afford you the true and only Signs that you can or will have of a *smooth and even Coaptation*: For as to its answering the sound Limb in its Shape, Length and Figure, with the Pains being abated after the Dressings are on, and the Patient laid in a proper Place and Posture, they are all very fallible and uncertain.

Pain, every one knows, will unavoidably accompany a Fracture, and to no small Degree affect the Patient, though it be well reduced; and if it be not so, yet the Appearance of Ease, when

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when the Limb is reclined on a soft Bed, and at rest, may deceive us into a contrary Belief; for it is only with moving that it becomes most sensibly affected; and this it will be, whether it be well or ill reduced. And as to its Resemblance with the sound Member, I cannot form to my self any sure Rules of judging after the Dressings are on; for, what Likeness soever they might have had before, it will be lost then; and in this we are never so frequently deceived as in the Thigh; for Pain, with the Weight and Unwieldiness of the Member, always sinks the Patient to the hurt Side, and imposes on us a false Length; so that I have seen a Thigh, which by its Appearance in a Cradle, has been thought to be longer than the other, prove, when come to be made use of, an Inch or two shorter. But to return: *Extension performed, and the Bone replaced, without any perceptible Inequality, Reduction is finished.*

Under this Head of *preventing and correcting Accidents*, I design not only to include the Dressings and Management that is instantly required, but to take in the whole Process of Cure, from Reduction to Recovery. And, First, *the Prevention of Accidents* will depend very much on a well ordering of our Dressings; which take as follows:

Second Intention is preventing and correcting Accidents.

Supposing the Fracture reduced, and Assistants still holding the Limb, we begin our Dressings, by enwrapping the Part round with a Compress of suitable Largeness dipped in Red

The Dressings.

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Wine, or *Oxycrate*, or else, what some think more preferable, an Emplaister; mine is generally *Empl. e Bolo* (*Fiat ex Diapal. acet. Bolo Ol. Rosar. M. S. A.*) Or the following *Defensive*.

R. Empl. Diapal. ℥iv. Ol. Rosar. ℥j. Pul. Boli. ℥i M. et extende super alutam.

In either of them I always choose to add a little Turpentine, because its adhesive Nature brings and preserves the Flesh *sort* about, and fits it the better for Bandage.

The Rowlers are next in Deligation. Course: The Number universally adhered to are three; two of them single, and one double; and have all the Advantages that any Rowling in the Cure can have. They are used according to *Hippocrates's* Direction thus: The first single Rowler is begun with three Turns at least about the Fracture, and finished upwards with Edgings; the other single Rowler is begun with the same Number of Turns about the Fracture, but rowled to the contrary Hand, and finished downwards: Over these comes the double headed Rowler, begun also like the former, on the Fracture, and has one Head carried and finished upwards, the other downwards. These Rowlers are to vary in their Length, in proportion to the Bulk and Largeness of the Limb fractured; are to be made of Linnen, (as least stretching,) and to be used in such a Degree of *Tortness*, as may support the Fracture, and yet not endanger ill Symptoms: A Medium not attainable but by Practice.

Compresses

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Compresses and Splints follow: The first are made of Linnen, the other of Paste-Board, or Wood, and armed with Tow; their Number, Length, and Breadth, are to be more or less, according to the Part fractured; and so placed, as to bear equally, and fill up any Vacuities or Slenderness the Limb may have in one Part more than another, and then fastened with four or five Tape Ligatures, beginning on the fractured Part. Among these Splints (whether the Fracture be of the Arm, Leg, or Thigh) there should be always a very large one of Paste-Board, for the under Part of the Limb, rounded at the Edges, and armed with soft Tow, (if need be,) to fit easy in the *Axilla* or *Inguen*, wet in *Oxyerate*, that it may mold to the Shape of the Limb, and should enclose so much of it, as that the rest of the Splints used (which need not be above two more) may be moved and shifted (if Occasion require) without Trouble to the Patient. Some choose to wet all these Dressings in *Oxyerat. cum Albumine Ovorum*; which I cannot acquiesce in, because I think the Cold and Weight retained by it induces more Pain, and that as they become dry, they grow slack, and expose the Fracture.

When the Dressings are finished, the *Position* of the Member requires our next Care; for it often happens, that although a Fracture be well reduced, yet the careless and unequal Situation of it after, subjects it to the same Misfortunes as an ill Reduction would have done: But as *Direction*, for this must vary according to the

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Limb fractured, it will be more usefully observed under the Notes that follow on each Particular; only this I shall take notice of at present, that the same Splints (though there be a double or a compound Fracture) should be *only on Necessity* admitted to come above and below the same Joint; for tho' such a large Splint as I here mean, is of great Support and Service in the inferior Limbs, (the Thigh in particular,) yet as we find the Continuance in one Posture only will frequently induce a Stiffness and Rigidity in such Joint, and this the more the Patient is in Years; so when we lend a helping Hand, and fix it immoveably, as it were, by Bandage and Splints, we have Reason to fear an *Anchilosis* by it; The *Synovia* in the Joints, by so long a Stillness and Inaction, gluing the Heads of the Bones like a *Callus*. I have seen the *Tibia* and *Femur*, the *Ulna* and *Radius*, from such a Cause, so cemented, as to appear like one continued Bone.

I come now to account for,
 The Correct- and correct, in the best Manner
 ing of Acci- I am able, such ill Accidents as
 dents. in the Course of Cure, are the
 Attendants of Fractures, *viz.*
 Pain, Inflammations, Fever, Tumor, Abscess,
 and Mortification.

And, first, of *Pain*. This is an inseparable Concomitant of a Fracture; and therefore never to be considered or attended to, as a dangerous Symptom, till it becomes more than ordinarily acute; and then, as it is productive of every other Ill a Fracture can suffer under, (as Inflammation, Fever, Tumor, Fluxion, and the

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the like,) it is worthy our exactest Industry to search the Causes, and prevent or correct them. The common Cause of Pain here is the Solution of Unity ; but what particularly aggravates, will be found to proceed either from the Fracture's being waved into sharp Points, or from some Portion of Bone entirely separated ; either of which Accidents, as they prick and vellicate the Membranes where they lodge, fail not to excite this Affection ; else it may be the Effect of *too hard Bandage, too hard Lodging, ill Reduction or Position, or, finally, a bad Habit of Body joined to either*, which will, from small Beginnings, improve to a *Fever* ; for Pain, which, in a greater or less Degree, is the certain Consequence of every Mismanagement, is always attended with a Contraction of the Parts ; which Contraction, according to the modern Hypothesis, extending to all the Parts of the Body, lessens the Secretions, or, which is the same Thing, acting as a *Stimulus*, divides the Blood into smaller Parts ; either of which increases its Quantity, which is the immediate Cause of a *Fever*. Pain and a *Fever* constantly follow one another, like Cause and Effect ; and by removing one, we seldom fail to subdue the other ; accordingly therefore as any of the afore-cited Causes shall take Place, we must diversify our Remedies : Any separated Portion of Bone, that we think cannot be replaced and reunited, we must cut and take away ; Lodging or Bandage too hard, we must ease ; ill Reduction rectify, by going over our Dressings again ; and if a *Dyscrasy* and ill Disposition be the Cause, we should endeavour to amend it with a Course of gentle Catharticks and Alteratives ;
because

because not only a Fever will be the Consequence of increasing Pain, but we ought to suspect Tumor, Fluxion, Inflammation, Apostemation, and even Mortification. A *Tumor* here is either the Effect of Pain, of too strict a Bandage, an ill Habit of Body, or *Plethora*; or from the general Imbecility of Nature, as in aged, ascitical, or Consumptive People. When the latter is the Cause, the Swellings are only *œdematous*, signifying a general Weakness, and will disscuss very probably from any particular Part by Fomentations, as it regains Strength. But when the Tumor happens through ill Reduction, or future Mismanagement, an ill Disposition, or a *Plethora*, it is, as one or more such Causes vigorously concur, attended with a *Fluxion of Humours*; and, as the Blood is saturated with acrimonious or bilious Particles, becomes a *Pblegmon* or *Erysypelas*, which again may not (impossibly) end in Apostemation, Abscess, or Mortification. I have already observed, That the only Methods of correcting Accidents are a good Reduction, a smooth Application of our Dressing, and an even easy Position: But though they are the solid Foundations of Success to a Surgeon, yet the general Indications for correcting them, when present, must not be omitted; I mean such Administrations as tend to the Mitigation of Pain, and Revulsion of Humours, viz. *Vena-Section*, *Enema's*, or *Laxatives*, *Anodynes*, and a strict Regulation in the six Non-Naturals.

R. Decoct. commun. pro Clysteribus ℥x. Ol. Cham. ℥ij. Mell. Mercurial. Syr. Violar. a. ℥j. Ol. Anisi. ℥s. M. F. Enema injiciendum. —

R. Decoct.

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Rx. Decoct. hujus ℥xij. Syr. Rosar. solut. Butyr. salit. sacch. Rub. a. ℥j. Ol. Anisi G. viij. M. pro Enema. —

Rx. Aq. Cinnam. H. ℥iij. Aq. Epidem. Syr. de Mecon. a. ℥l. L. liquid. G. X. M. pro Anodyn. hora somni sumend.

Rx. Aq. Cerasor. N. ℥iij. Aq. Cinnam. F. ℥l. Syr. de Mecon. ℥vj. L. liq. G. xvj. hora Decubitus exhibend. & repet. pro tribus vel quatuor Diebus.

Also to direct their Diet to be low, and such as is of light and easy Digestion, (as Gruel or Panada,) abstaining from Flesh; and for a common Drink, Sack-Whey, or the following; *Rx. Aq. Hord. ℥j. Sacchar. Albiss. Sp. Nitri vel Ol. Vitriol. a, q. s. ad gratum saporem.*

Rx. Succ. Limon. ℥ij. Aq. Hord. ℥ij. Sacchar Alb. ℥j. M. pro potu Ordinario. If the Ill should still encrease, and the Patient be rendered weak and faint by it, an Alexipharmick should be given.

Rx. Pul. e. Chel. C. gr. xvi. Spec. Diamb. f. o. gr. xij. Conf. Alkerm. f. o. ℥l. M. F. Bolus sexta quaq; hora sumend. Superb. Coch. ij. Julap. sequent.

Rx. Aq. Cerasor N. ℥viii. Aq. Peon. C. Theriac. a ℥l Margarit. ppt. ℥ij. Sacch. alb. q. s. F. Julap.

Or the *Pulvis Alexiterius*, and *Julap. Volatile Ratchiffian.*

We should likewise, for obtaining this End, relieve the Limb of all that Lumber of Dressing, that by its Weight may incommode it, preserve it in a quiet and steady Position, and prohibit the Increase of Fluxion by a Defensive
on

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on the Joint next above the Fracture, and a cooling and discutient Ointment and Emplaster to the Part itself, using also now an eighteen Tail Bandage, instead of the circular, for the Conveniency of applying these Topicks daily.

R. U. alb. & populi. a. p. & pars Exungatur & circa Tumorem Empl. Cerat. Diapalm.

For a stronger Discutient the following Cataplasm,

R. Fol. Alb. Mij. Sem. Lini Fenugrec. a. 3℥. Flor. Chamem. Melilot. a 3ij. fiat Cataplasm. addendo Ol. Rosar. 3ij.

If Erysipelatous.

R. Succ. Sambuc. Ol. Lini. a. 3ij. coq. ad succi Consumptionem deinde adde tantillum Lithargyri. Vel,

R. Sp. Vini. 3iv. Sacch. Saturn 3j. M.

If it be simply a Tumor, (œdematous,) we must consider what Remedies we have against Age; an hydropical, or weak and hestick Disposition that Occasions it; and the quicker Foresight we have of them, the better able are we to fence against Dangers, which though not threatening, as to the Patient's Life, may, as to the Use of the Limb. I shall, previous to the Remedies, lay down these two Propositions.

First, That œdematous Tumors do soon appear in imbecillitated Constitutions; for by whatever Cause the Blood becomes depauperated, whether through Age or other chronical Distemper, the Juices will fluctuate but slowly through their Channels, and the solid Parts having lost also of their Tensify, it cannot

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not but happen that every light Compression will obstruct their Circulation, and cause a Tumor.

And, Secondly, such Tumors will be of longer Continuance, and more Troublesome to dissipate, than the others by Fluxion, because the *Fibres*, as they have been a less or longer Time stretched beyond their natural Make, do lose of their vibrating Power, or, in other Words, the Tone of the Part is weaken'd or destroyed.

We are therefore by heeding to these Propositions more easily led to a Remedy, and should no sooner have Apprehensions of the Debility and Weakness of a Constitution, but we should immediately slack the Bandage, and change it for the eighteen Tail, though never so small a Distance of Time from the Reception of the Fracture, that the Blood and Spirits may have a freer Recourse there, of which these congested Tumors (as I have said) always argue a Defect; and there will be no fear of a Distortion, from this Liberty, because the Coldness of their Constitutions suppresses the Inclinations to Motion and Uneasiness, which are more familiar and perplexing in brisker Circulations; and the more the Tumor spreads and increases, the less will be their Incitements to disturb it; insomuch that I have wholly laid aside Rollers, and trusted such Fractures to Compress and Splints, contriving only the easiest Position possible, and helping Perspiration and Strength forward with warm Bathing, spirituous Embrocations, and nourishing Diet.

Rx. Absynth.

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Rx. Absynth. commun. Alb. Centaur. Hyperic. a. Mij. bacc. Juniper. ℥j. Semin. Fenic. Carni. a. ℥ij. contendantur semina omnia in Aq. Commun. Cong. iij. coquantur ad tertiae partis Consumptionem. Colaturæ adde Sp. Vini. q. s. & servetur; post usum Foti utimur Embrocatione.

Rx. U. Dialb. Sp. Vini. a. ℥j. Ol. Absynth. g. vj. vel.

Rx. Pingued. human. ℥ij. U. Nervin. ℥l. Ol. Euphorb. Petrol. a. ℥j. M.

Internally, it will be proper to keep the Body open, and prescribe good Stomachicks and Diureticks.

Rx. Pul. Senna, Crem. Tartar. a. ℥j. Ol. Anisi gr. viij. Elect. Leniti. ℥j. M. pro quatuor dosibus Vesper. Assumendis.

Rx. Vin. Alb. ℥ij. sal. Absynth. ℥il. F. Haustula ad Libitum sumend: Or,

Rx. Vin. Alb. ℥ij. Ciner. Genista ℥j. filtretur adde Tinct. Lign. Sassafr. ℥l. M. Or,

Rx. Zedair. Galangæ, Cyperi, Calam. Aromatic. Nuc. Mosch. Cinnam. Macis a. ℥l. Cubeb. Caryophyll a. ℥j. Croc. Anglic. ℥j. nodulo ligat. stent frigida infusione Vin. Alb. Cong. i. tempore usus filtretur. capiat. haust. mane, jejunò Stomacho & quarta Pomeridiana. Or,

Rx. hujus Vin. ℥ij. Rhubarb. ℥ij. Infunde & capiat Haustulum omni mane Colaturæ.

Should there be Danger at last Mortification, of a Mortification from the increase of this Tumor, or from the exasperating Symptoms in a Phlegmon or Erysypelas. or the Greatness of the Contusion, I have considered the proper Applications at the End of the Chapter of AMPUTATIONS, to which I refer.

Distortion.

Distortion. There is another Accident behind, to which Fractures are frequently subject, and that is Distortion: This happens by *ill Reduction* at first, or *Mismanagement* afterwards.

Distortion of the Bone, how prevented or removed.

From *ill Reduction*, when the Ends of the Bone do not answer *Fibre to Fibre*; and this, in all likelihood, they will be the widest from, where the Obliquity of the Fracture is greatest. There is likewise another Evil, which I think is not commonly meant when we speak of a *Distortion*, though it be a very great one, and may not only produce the ordinary Effect of it, a Weakness and Lameness, but be a Misery; and that is, when the superior Part of the fractured Bone overhangs, and for want of meeting the other to intercept the Superfluity of Nourishment, shoots forth into Processes: I have seen them in a Thigh Bone to the Length of six or eight Inches.

Distortion owing to ill Reduction.

From *Mismanagement* a Distortion happens, and that chiefly in the Thigh or Leg, when in our future Attendance, we neglect the Position, and so in Proportion as it is wreathed to one Side, or the Heel is raised or let fall too much, and inadvertently continued so, the Edges of the Bone meet closer in one Part, and recede in the Opposite; which Space or Vacuity filling with the Matter of a *Callus*, brings a Curvity. As this Accident is seldom heeded, or known 'till late, so it is past any other Remedy, but Breaking again, which is looked on as the sole Resort.

To Mismanagement.

The

The Time of opening a Fracture according to Mr. *Wiseman*, &c.

The first Time of opening a Fracture, is directed by Mr. *Wiseman*, and others, to be the seventh Day from Reduction, assigning these two Reasons; First, That if the Bone has been ill reduced, or any other Mistake made, it is then seen, and may be rectified. And, Secondly, there is Opportunity to bath the Part, and allay the Itching that has arisen there through the Detention of Humours.

The Purposes here are right, but the Seasons of pursuing them strangely mistimed, and would be ill Practice to observe; for, first, if it be apprehended that the Bone is ill reduced, we should correct the Mistake sooner, even the same Day. An Adherence to such a superstitious Septinary Period, when our Process has been wrong, is only inviting the very Accidents we should be careful to shun: And as to itching, it does not happen, or is not troublesome, till Pain abates, which we know is, as the Part strengthens, and the *Callus* confirms; but grant it should, I cannot think the easing of that, is to be put in Competition with the Hazards of displacing and distorting a Bone; as, for Instance, in the Thigh, how impossible, almost, is it to open at seven Day's End, without destroying our former Reduction, and all that has been done for the Patient's Security.

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It may be then asked, at what Distance of Time it will be proper to open a Fracture. To which I answer, not until a *Callus* has knit the Ends of a

The Author's Opinion what Time is proper.

Bone, which, for a common Computation, may be in about three Weeks. Some extraordinary Accident may intervene, that seems to be of greater Consequence, and exacts our Attention before the Fracture: Such may be, very accute Pain, Inflammation, or other aggravating Symptoms already taken Notice of; but what is the most common, though an insufficient Pretence for it, is the Slackness of the Bandage, when a Fracture receives no Support from it; a Defect that I have always thought more safely supplied by drawing the Splinters *sort* from Day to Day.

Callus is a Medium that unites the divided Bone, and the Generation of it depends chiefly on a Correction of Accidents and a proper Nutritive Diet; it is a white thick viscous Substance, Part of the *Succus Nutritius*, supplied there by the *Fibrille* dispersed through the Substance of the Bone, and is a Juice that, by its being so continually at Hand in Fractures, has probably a constant Circulation through the Bones; for if it was to stagnate, I see no Reason but that it might harden to the same Degree it does on Extravasation, and so prevent by this Obstruction of the Passages any fractured Bone from ever uniting; but whether this be so, or that the Marrow they contain by distilling or sliding through their Porosity, from the interior to the exterior

exterior *Lamina*, be the Supply, I cannot resolve.

The former, which is Dr. *Havers's* Opinion, is most probable, and that nutritious Vessels run through their Substance; by their Discontinuity where a Fracture happens, the Nourishment they contained, naturally ouzes from their small Orifices, and spreading or extravasating it self round the Edges of the disunited Bone, cements them with an easy Adherence only the first Day; but in a longer Time the thinner Parts being dissipated by the Heat of the Body, the Remainder becomes so hard a Substance, that the Bone sooner breaks in any other Place, than there again: The Reason of which may be also (if the Strength of a Bone, more in one Place than another, be as its Diameter) that it becomes thicker there.

Callus, how generated.

From the Nature of this Supply, let us consider of the proper Means to generate a *Callus*, and how we are to correct its Defect or Luxuriancy.

For obtaining this uniting Substance, there are two controverted and very opposite Opinions, in respect to internal Means; *the one* would help forward its Generation by in-crassating Medicines, such as * *Lap. Osteocolla*, and other shelly and testaceous Powders; and *the other*, by attenuating Medicines.

The

* *Lemery* says, 'tis called so from *Osteon* and *Colla*, which is as much as to say *Bone Glue*. It is a chalky white Substance, the great Pieces hollow, (the small ones not so,) and grows at the Roots of Trees; there are two Sorts, *English* and *Palatinate*.

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The latter of these seems to have the greatest Weight of Reason; for as the *Fibrillæ*, importing this nutritious Juice, are so small as to be almost indiscernible, such Medicines as attenuate must give it an easier Transit, and sooner accomplish the End. Experience confirms this, since we find Bones soonest unite in young People, and in Winter Season; which I think can be for no other Reason than that the Circulation being quicker, the Particles of Blood are by that Means more comminuted, and better fitted to pass through those slender Fibrils to the Nourishment of the defective Part.

On the other Hand, incrassating Medicines, whatever Faith any of our Forefathers have put in them, (particularly *Lap. Osteocolla*, which, some have said, would knit a Bone in four Days Time, I cannot but think must impede this Work, by thickening a Juice too unapt before to pass through so fine Capillaries, and particularly in aged People; for their diminished Heat and Circulation is already so great an Impediment in the forming a *Callus*, that sometimes neither Frictions, strong Fomentations, slack Bandage, a nourishing Diet, and the like proper Means, can prevent an irremediable *Atrophia*.

Authors also for this End order nourishing Diet, such as strong Broths of Veal, Kid, &c. and externally Emplasticks, such as *Empl. stict. Paracels. Oxycroceum*, Gum, *Thus*, *Myrrh*, *Labdanum*, *Aloes*, and the like, mixed and applied Plaister-wise. These by obstructing Transpiration, and retaining the warm *Effluvia's*, are supposed to increase the natural Heat, and promote

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mote a *Callus*: But the best Practitioners (altho' they do not altogether shun their Use,) yet esteem them of little Service; and that the best, if not the only Help necessary and conducive to that End, is the Quiet and Ease of the Limb.

There is an opposite Fault to this Deficiency of *Callus*; and that is its abounding too much; for which I see nothing but Pressure with a thin Plate of Lead, strict Bandage, and a Retrenchment in the Patient's Diet, can be of any Service, an *Empl. de Cicuta, de Ranis cum Merc.* or such like, may be apply'd also for this End, tho' they seem of inferior Efficacy.

Observations on FRACTURES of the Finger.

A Finger is seldom fractured without a Wound, and must be differently treated, as it is the first, second, or third *Phalanx*.

When it is the third *Phalanx*, or Extremitie, that is fractured, we need not be hasty in the Extirpation of that Joint, how irrecoverable it may appear at first; for Nature sometimes exceeds our Expectations; and no doubt it is better a Joint be preserved (tho' clumsily cicatrized) than lost; nor needs there any other Regard here, than what the Wound would have required, had there been no Fracture, excepting only, that we change the Rowler one Day to one Hand, and the next to the other, to restore the preceding Deflexity.

But if it be the Middle, or the first *Phalanx*, that is fractured, there is a little more Care and
Con-

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Consideration wanted, both to replace the Bone, and to preserve it so.

And, first, the straightening of a Finger is the replacing of it; if any Particle of Bone is an Obstruction to this, or separated, it is to be removed; and if the Wound be so large as to shew the Bone, it should be covered with dry Lint, or a Dossil pressed out of *Tinct. Myrrh.*

To secure the Fracture, I use only a *Plaster Compresses*, and two *Splints*; Rowling I think inconvenient here, in that it wreaths the Finger aside, and makes a distorted Union: The middle Part of the *Plaster* is to be applied on the Wound, and to come round the Finger, (first cutting out so much as may leave room for Dressing.) The two small *Splints* with each a *Compress*, I place on the upper and under Part; more than these would be troublesome, and indeed cannot be used, especially in the first *Phalanx*; but that the Pressure may not be unequal, or give Room to the Bone's receding that Way, we supply the want with more little *Linnen Compresses*, one on each Side; and having tied the whole with a couple of narrow *Ligatures*, place it to the Breast, to be out of the Way.

This Dressing has all the Benefit that can be proposed: It is of Support enough, keeps the Wound from the Injury of Cold; and by only untying the *Ligatures*, they are all easily removed, and the Wound presented for your Inspection.

Observations

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Observations on FRACTURES of the Cubit, or Humerus.

In Fractures of the *Cubit*, or *Humerus*, the Elbow must always be kept clear of the Dressings, that the Fore-Arm may bend to rest easily in a Sling, which is to be placed to the Breast, and the Extremity a little elevated.

This is required in common; but in their particular Treatments they may have a Variation to their Advantage; as for Instance, the *Cubit* requires not so confin'd a Posture as the *Humerus*, but may be suffered to play from the Breast a little, without the Fear of any ill Consequence ensuing; it is on the Advantage of this free Position, and its being so little affected with the Motions of the Body, that makes it of the least Disturbance to the Patient, and subject to the fewest ill Symptoms of any fractured Limb; but the *Humerus* being a single Bone, ought to be more steadily fixed, to prevent the ill Accidents a loose Situation will expose it to; and if broke near its Juncture with the *Scapula*, it must be treated like a Dislocation. I shall give one Example, both to explain this Case, and farther illustrate the Truth of what I have before advanced, in relation to the Accident that beset it.

I had a Fracture of the *Humerus* sometime ago; as near the Juncture as I think could possibly happen. After an Extention and Reposition of the Bone, I apply'd a defensive *Plaster* a large Compress that enclosed the whole Joint, some soft ones of Linnen in the *Axilla*, and the Bandage called *Spica*, pinning down the
Arm

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Arm close to the Patient's Side, and raising the *Cubit* in a Scarf to his Breast. Nothing of Splints could be used here, nor do I think that those, or any Thing, else harder or uneasier than what I have mentioned, can be forced on such a Fracture, without disturbing or rendring the Contributions of Nature abortive.

The Patient being old, and at that Time in an hydropical State, a very large oedematous Tumour quickly spread through the whole Arm, yet he suffer'd very little Pain from it; which, whether I might account as a Sign of good Reduction, or the Largeness of the Tumour deadening the Sense, I could not then tell; however, I took off the Bandage, believing that might be one great Occasion, with Hopes that Fomentations and Spirituous Embrocations might help towards its Dispersion; but was in a few Hours obliged to re-apply them, the Limb becoming (as he expressed himself) so heavy and painful a Load, that he could not endure it.

I assisted these external Applications, by keeping him to Diureticks and good Stomachicks, throwing in a Purge now and then, as his Strength would bear; but the Weakness and Tumour notwithstanding continued, stretching the *Cuticula* into Vesicles at several Places, and at several Times, for the Space of three Months; at length a *Callus* being formed, a Diminution gradually succeeded; and after a long tedious Use of Fomentations and Spirit, the Limb was brought to some Share, though never wholly to, its Use and Strength.

C

Observations

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Observations on Fractures of the Clavicle.

FOR the Reduction of this Bone, the Patient is to be seated on a Stool, while an Assistant behind, with his Knee up the Back, and his Hands on each Shoulder, pulls both backwards, at which Extention the prominent Part of the *Clavicle* may be easily pressed down to join with the other.

After Reduction, the *Cubie* must be slung to the Breast, (as in the Arm,) and the Patient very careful in its Quiet and Repose; for though it be easily reduced, it is difficultly retained so, because a steadfast Compression is hard to be preserved for any Time.

The *Clavicle* being less solid than many other Bones of the Body, makes a *Callus* the sooner thrust out; for that is what depends much on a greater or less Porosity.

If it do not unite evenly, the worst Consequence will be, impairing the Motion of the Arm forwards.

The Dressing to this Fracture is a defensive Emplaster first, a large Compress over it, and then the Splints; the Number of them may be either three or one, as different Judgments shall approve; if three, then the two longest, with each a Compress under, are to be placed one above the other, below the Bone; and the third, which need be but very short, is to go cross them directly over the Fracture, the Vacuity between having been first filled with other Compresses, to make the whole bear equally; if but one Splint, (which is what I always chuse

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chuse my self,) it must be cut parabolical, as best adapted to the Shape of the Part, and to make it sit with greater Security to the Fracture: I put, besides the Compresses, (ordinary for filling up the Vacuities,) another across that Part of the Splint which is to rest directly on the Fracture, that so the Pressure may be closest there: Over either of these must be brought the Bandage called *Capeline*, described by M. *Le Clerc*, taking Care to fill the Arm-Pits with Tow or soft Linnen, to prevent Galling and Uneasiness.

Observations on Fractures of the Legs

Though the Length and Conformity of a Leg is very much conserved when the lesser *Focal* is entire, yet it may be so bowed, as to create great Lameness; and this from a headless Elevation, but more from a Depression of the Heel: Wherefore a constant Care will be requisite for a firm, steady, and equal Position, particularly from the Fracture downwards, for that is most yielding; and a Negligence in fixing it will produce a Curvity; and this the more likely, the higher the Fracture is on the *Tibia*. But such a Depression, by the way, cannot have the same Influence on a fractured Thigh, because the Joint of the Knee intercepts such Motion from it.

The Dressings for the Leg, are as in the general Account: It has only this in particular, That it may be placed in a Case, filling up the void Spaces on each Side, from the Knee to the Ankle, with Compresses to keep it
C 2 steady,

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steady, and prevent as much as we can its yielding to the Motions of the Body.

We must also apply a Defensative to the Knee, the better to prevent Tumor and Fluxion, and place it in a strait Line with the Body; for those heavier Parts next the Body sinking by their Weight, will soon make the inferior Limb in an *Ascent*.

Signs of good Reduction in fractured Limbs, are, 1. A soft Tumor at the Extremity of the Bandage. 2. A great Abatement, though not Exemption from Pain. And, 3. the Appearance of a strait and even Position. When this is the Case, we may submit it to our first Dressings, without any Alteration for a Month; then the entire Slackness of the Bandage, and Itching of the Part, will call for an Opening; and having given a Perspiration to it, by a Bath of warm Water, the Dressings may be re-appl'd, or left off, as the *Callus* is found more or less confirmed.

Observations on Fractures of the Thigh.

A FRACTURE of the Thigh, the Thigh is the most considerable most difficult of any, the most difficult to manage, and preserve in a good Site; has the worst Symptoms attending it, and the oftenest ends in Lameness: And this,

1. Because

I. Because its being the com-
pactest Bone of the Body, and
environ'd with thick Muscles, As subject to
the Force that breaks it must be greater Pain
be greater, and consequently and Fluxions
the Contusion, Pain, &c. aggravated.

II. Secondly, because being a
single Bone, and destitute of any more liable to
other Help to preserve it in a be distorted.
true Position, than what the
Dressings give, it suffers unavoidable Distur-
bance from Swelling, and the restless Mo-
tions and Longings, that will ever happen
from one long-confus'd Posture; and the Ap-
plications less effectual to prevent Distortion
than in other Fractures.

III. Thirdly, because the Thickness of the Flesh
makes the Bandage less effectual to prevent
Distortion, and still worse when they slacken,
which will be always before a Callus is
formed.

IV. And, Fourthly, the Obliquity of
Fracture is, for the same Reason, of worse
Prognostick here, than in any other Bone;
for when it is very great, the Pain that stimu-
lates the Muscles, will draw up the inferior
Part in spite of any circular Bandage; and the
farther the Fibres in Union depart from their
Opposite, the shorter the Limb, and greater
must be the Lameness.

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How to discover in what Part of the Thigh the Fracture is. To find in what Part of the Thigh the Fracture is, slide one of your Thumbs gently on the Outside, for there the Bone is nearest the Touch; and by giving the Thigh a little Motion at the same Time with the other Hand, you are presently convinced of the Place.

Extension for reducing it should be strong, because the Contraction of such large Muscles, as are in the Thigh, would prevent a due and equal Coaptation without it; and perhaps the Ends of the Bone, by their Attrition, might break off some Particles, and create a future Disturbance: Yet on the other Hand, there must Judgment be used, a too violent and unnecessary Extention, (and especially of large Muscles, swelled with Blood and Spirits,) hazards greater Pain, Fluxion, Inflammation, and Convulsion.

The Signs of a good and equal Coaptation, are taken from its answering in Length and Shape to that of the sound Thigh, and from the Surgeon's own Feeling, who should move his Thumb smoothly up and down, till he is entirely satisfied.

The Dressings for this Fracture take up Time, and should therefore always be in Readiness. In order to apply them, the two Assistants, who make Extention, still continuing to hold the Limb fixed and Ready, you are to apply an *Empl. E. bolo*, the Defensative N^o 32. or the like, and three Rowlers:

Rowlers: Under the first, I include an indifferēt thick Compress, directly on the Fracture; and on that Side, the End of the inferior Part of the Bone was felt, for thither it will always have the greatest Tendency. The last is a double Rowler; and within that half of it, which goes downwards, I comprehend a large Compress, thick enough to bring the lesser Part of the Thigh to such a Bigness, as that the Splints may bear equally, and then finish the End below the Knee. The next in Order, are the Splints and Compresses: There must be a large Splint shaped for the under Part of the Thigh, and about three more of less Magnitude, all armed with Compresses, which, for supporting the Reduction, are to be tyed fast about the Limb with three or four Tape-Ligatures. Further, it is after this convenient to know where the Patient is to continue, that so the Bed, Pillows, Ligatures, and Junks, which are to lay under him, in the Order they are mentioned, may be placed so as shall best suit Ease and Convenience: For Instance, if a *Cot* be spread over the Bed, if the fractured Thigh be outside, and the Pillows the Limb rests on very soft, they are each more convenient than the contrary; for a soft Bed sinks the Body and Limbs unequally, and hard Pillows sit too uneasy; and on the other Side, keep the Limb from falling proportionably with the Trunk; both of them incommodious and hurtful.

The Junks (in this Fracture necessary) are two, made of what made. Sponge, or Mop-Staves, armed and how used. with Tow, and rowled up in Linnen or Bunting contiguous.

The outer Junk must be longest, and reach from the Ankle to above the Hip. The inner must come as near the Groin as will consist with the Patient's Ease. Both are rowled up close on each Side, and fasten'd with the Ligatures that lay next under them. At convenient Distances Pillows are also tied, rounding upon the Thigh and Leg, and the Hollows of the Ham and Heel filled up, to hinder swaying either to the Right or Left.

The Sole is of Pastebord, cut near the Shape of the Bottom of the Foot, with Holes pierced through for a narrow Tape, which is to be fasten'd to some or other of the Ligatures that tie the Junks: The Use of it, is to keep the Foot upright, and stretch out the *Tendo Achilleis*, which otherwise would probably, by long laying, be contracted.

There must be lastly, some Contrivance to prevent the Weight of the Bed-Clothes affecting the hurt Part. In a Cradle it is done by a Hoop, or two, passing from one Side to the other; and in a Standing-Bed, by a Wooden Pin, of a proper Height, fixed at the Feet of the Bed-Post.

Having thus briefly run over the Method and Treatment of a Thigh, the most considerable of all Fractures, I shall conclude it with an Example,

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Example, or two, to supply any remaining Deficiency.

Examples of a Fractured THIGH.

I. In the Hard Winter, 1709. a Young Man of twenty Years of Age fractured his Thigh, by a Surging of the Cable, about four Fingers Breadth above the Knee. I reduced it, and proceeded in the Method before laid down; only instead of Junks, I infixed the Dressings with a Sheet of Pasteboard, (that came from above the Fracture to below the Calf,) placed the Leg and Thigh even, and in a Position easy to him, kept the Great-Toe in a Line with his Knee, and carefully filled up the Vacuities at the Ankle and Ham with Compresses: I also bled him; and in the Evening gave the following composing Draught.

R. Aq. Theriac. Syr. de Mecon. a. ℥i. Laud. Liq. g. xvj. Aq. Fjord. ℥ij. F. Haust.

The next Morning I found him easy beyond Expectation, (the best Sign of a good Reduction;) and as it is an Argument of the Dressings being well apply'd, and the Fracture in a right Order, so, after such Assurance, there seems little more required or wanting to Success.

This Case I submitted to the first Applications about three Weeks, only attending to keep the Limb in a due Order, and preserve a Conformity by a small daily Extention. In that Time he became able to walk about with Crutches, and soon after without. Which quick

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Cementation was to be attributed principally to the Patient's Youth, and the Coldness of the Season.

II. Was another Fracture, by the Fall of a Tent-Pole, above the Middle of the Thigh. He had lain several Hours in the Cold and Rain before I was brought to him, and the Limb very painful, stiff, and swelled. However, with strong Extension I reduced it: But before the finishing of the Rowler heard the Ends of the Bone grate, and pass one another. From whence it was easy to conclude the Work undone. Yet in regard to the Trouble and Pain he had suffered, I only breathed a Vein, and gave an Anodyne Draught, deferring Reduction till next Morning.

Before the Renewal of my Process, I had been debating the Disadvantage of a circular Bandage. When the Fracture is high, there is Difficulty in supporting a Thigh steady for so long a Time, as it takes up in finishing; there is Trouble and Awkwardness to us in making it; and afterwards, in giving the Limb a proper and easy Site: Disturbances that in my Opinion, leave very great Uncertainty, whether, after all our Pains, ^{exposed} the Ends of the fractured Bone meet one another, or not. Wherefore I concluded to change for the eighteen Tails; and ordered that, and the rest as follows:

Before Extension I placed the Patient in the Cradle he was to lay in, with the Pillow the Thigh was to rest on under him: Upon this, I first put some long Ligatures for the Junks, then the Junks themselves; other Ligatures to fasten the

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the Splints, then the large Splint and Compress; the * Eighteen-Tail Bandage next; and last of all, a defensative Emplaster, because they so follow one another in the Application.

For Extending, I raised his Leg and Knee but a small Distance from the Pillow, while another made a Pressure, or contrary Extention above. The Stiffness and Tumor became now, indeed, a great Impediment; but having surpassed these Difficulties, and reduced it, I made the whole smooth, equal and well supported; repeated, *Venesection*, the Anodyne Draught, and forbid any other Food than Gruel, P-nada, or the like easy Sustainance.

Next Morning I found a high and quick Pulse, a great Pain and Tumor about the Thigh: But supposing these Symptoms to proceed rather from the repeated Disturbance given to the Part, than any Error in Reduction, I would not meddle with the Dressings, but prescribed as follows;

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* The Make of this Bandage is described in Sect. 2. of *Compound Fractures*: p. And though it be called of Eighteen Tails; yet there needs no confined Number, but at Discretion, as may best suit the Security of the Case. It should be so contrived, that the thickest Number of Tails may come on the Fracture; and those Tails rather too long than short, because the former (when thought necessary) may be shortened or doubled in the Using; but there is no Remedy for the other, but by changing. In using this, the Compresses mentioned before, in the circular Bandage, may as conveniently be included here.

℞ Aq. Hord. ℥ij. Spt. Nitri. Dul. g. xxx.
cum tant. Sacch. ut Palat. placeat pro
potu Ordinario. In Pulmento adiciamus
Manna Calab. Syr. Rhabar. cum Cichor. a.
℥ij. Alius autem non promovens usum
suppositor. Institui quod in hoc Casu practice-
matibus Existimas.

This procured a Stool ; but he nevertheless
continued very feverish, restless, and uneasy :
The succeeding Day I gave as follows ;

℞ Corall. Ppt. Ocul. Cancror. a. ℥j. Sal.
Tartar. ℥ij. divid. in Chara. octo quantum
sumat unam quartam quaq; Hora in Coch.
ij. Julap seq.

℞ Aq. Epidem Mirab. a. ℥vj. Aq. Cin-
nam. ℥i. Lactis a. ℥ij. Margarit Ppt. ℥j.
Sacchar. Albiss qf. F. Julap.

℞ Aq. Lactis ℥j. L. liq. Cydoniat. g. vj.
Spt. Nitri dul. g. x. Aq. Mirab. ℥ij. Syr.
de Mecon. qf. Hora somni sumenda.

I was very doubtful of him for about a
Week ; but then the Pain and Fever began to
mitigate, and the Tumor fall. After this, with
due Management of the Part, he gradually re-
covered from all those ill Symptoms, and was
able to walk with Crutches at the End of seven
Weeks.

SECT.

SECT. II. Of COMPOUND FRACTURES.

The Term *Compound* may signify a double Fracture of the same Bone, or when the Accidents of Inflammation, *Erysipelas*, and consequent Apoplexion, has succeeded to a simple Fracture; but Custom has confined the Appellation strictly to such Fractures as are immediately accompanied with a Wound, whether the Bone appear through such Wound, or not.

A compound Fracture defined.

What I have to say under this Head, shall be on such of them as are occasioned by Gun-Shot; where, if the Circumstances and Method of Cure be well adjusted, there will be nothing wanting to make it equally useful in Compound Fractures from any other Accident.

The Signs denoting a Compound Fracture, are the same with those of a Simple; only as it is accompanied with a Wound, we have sometimes to the Impotency of the Member, and our feeling the fractured Part, the additional and indisputable Evidence of Sight.

The Signs.

The Danger of these Fractures is more or less, as the Bone is more or less splintered; and its Substance lost, as it is nearer to, or farther from a Joint; as the Intrusion of foreign Bodies is more or less, and the Wound great or small, convenient or inconvenient, for

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for their Extraction, according to what Limb it is ; and, lastly, as the Habit is good or bad.

Remarks

on these

Prognosticks.

First, If there be a great deal of the Substance of the Bone lost, we are apprehensive that so large an Interval or Space can

never fill up with *Callus* to support the Actions of that Limb ; what this Distance is, and how far Nature may be expected to exert itself in the Supply of a *Callus*, I can from my own Experience assign above two Inches ; but have heard Relations, and seen Instances of greater, particularly at our Hall ; where a greater

And first the
Loss of Bone.

Focile of the Leg was shewn, from which had been taken away, of the Substance of the Bone, to the Length of five In-

ches, and that intermedial Space supplied with strong *Callus*. Now, although we cannot rationally expect the like Success of this every where, yet such Examples are Encouragement to wait the Strength of Nature in any great Losses of the Bone, and not immediately resort to Amputation, but to be armed with Patience against the Tedioufness of Recovery ; for as the Distance to fill up is great or small, so must be the Time to perfect it.

Second, when
the Fracture
happens near a
Joint.

Secondly, If a Compound Fracture happen in or near a Joint, it augments the Danger, because the Muscles there become tendinous ; and therefore,

First, as being endued with a more exquisite Sense, the acute Pain that follows will always

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ways create Fear and Suspensions of its terminating in Fever, Convulsions, and Death : Nor is this the less to be dreaded, if they should not immediately succeed the Infliction ; for it is a common Observation, that such Symptoms are not the direct and immediate Consequence of Gun-Shot Wounds, but come after a Time, as the Parts recover their Sense, and the Sloughs separate : *Secondly*, they are dangerous, because the Deficiency of natural Heat will keep them indigested, and in the End make them fistulous : And, *Thirdly*, because it is a Chance if such Compound Fractures cure without leaving some irremediable Maim or Lameness.

Thirdly, When much Rag or Filth has entered the Wound, or the Bone is so comminuted, as that several Particles and Shivers of it are to be brought away, a large Wound is safer and more commodious for this End, than a small ; and where the Smallness is visibly, an Impediment to Extraction, as in Fractures from Musket-Shot, whose Orifices contract, there is an absolute Necessity of dilating.

Third, Extractions, of what, and how done.

But then, it may be remarked of this Extraction, that whatever has been omitted of it, at the first Dressing, which should be made presently on the Infliction of the Wound, is better afterwards left to the expulsive Power of Nature, which more kindly thrusts towards the Orifice any remaining Extraneosity, than can be effected by any dark Search with Probe or Forceps, especially in thick *muscular* Parts :

And

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And again, there is not a Necessity, that every large Portion of Bone, because loose, should be brought away; no, if it adheres to the muscular Parts, the returning such to its natural Position, will unite; and for the same Reason as any double Fracture of a Bone would; there appearing the same Necessity of removing the whole intervening Portion, in such double Fracture, (let the Distance be what it would,) as there does for taking away the former.

Fourthly, In reference to the Fourth, a Distinction from one Compound Fracture may be made in the Limbs wounded.

Limbs, considered severally, one Compound Fracture may be worse than another, the inferior than the superior Limbs, the Thigh than the Leg. A Thigh is so unmanagable and with all so fleshy, that any Thing extraneous once lodged there, quickly slides through the Interstices of the Muscles, and so alters its Situation, as makes the finding it difficult, and frequently eludes the nicest Search: However, in this, or any other thick muscular Part, where a Bullet or other foreign Body is lodged, we should use our utmost and immediate Endeavours to surmount the Difficulties of Extraction, easiest to be done now when the Patient is warm with Action; and because though such Extraneas have sometimes lain Years with little Inconveniency to the Patient, there is yet greater Reason to expect that their Lodgment (especially on the membranous and tendinous Parts) will be quickly productive of acute Pains, Fever, Spasm, Convulsions, and Death.

Inten-

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Intentions of Care. The Rules and Method of treating a Compound Fracture, may be comprehended under four Intentions; some of which regard both Wound and Fracture, as they are considered together; others the Fracture only: And they are, *first*, the Extraction of extraneous Bodies; *secondly*, Reduction; *thirdly*, Retention; and, *fourthly*, the preventing and correcting of Accidents.

1. *The Extraction of extraneous Bodies* is our first and immediate Care, and is by no Means to be deferred, lest the Tumor and Stiffness of the Part prove afterwards an insuperable Difficulty:

First Intention to Fractures by Gun-Shot, is Extraction of Things extraneous.

In order to it, the Patient is to resume, as near as he can, the Posture in which he was shot; and the Muscles being as yet pliable and soft, there is great Probability that our Feeling, and Instruments together, will inform and help us to get out all foreign Bodies with Ease the same Way they entered: An Incision (if needful) may be made to facilitate it; but if it has near made its Way through, it will be properest in the opposite Side, or where it would have passed if the Force had not failed.

In extracting these Bodies the Forceps should not be opened till you touch them, lest you inclose some Flesh or Tendon; that will both frustrate the Removal, and give unnecessary Pain.

When all is extracted that is within Reach of your Fingers or Forceps, it may be proper to inject some warm Wine, or the Decoction of some vulnerary Herbs, to bring away any remaining

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remaining indiscernible Offices or Bits of Garment.

Second Intention, is a good Reduction of the Fracture.

II. *Reduction* follows Extraction: It is the Replacing of the fractured Ends of the Bone smooth and even, performed by a due and steady Extension: But of this, I have spoke sufficiently in the Chapter of Simple Fractures, p. 5, 6. and shall therefore decline any Repetitions, and come to the Retention of it when reduced; in which we take a different Procedure.

III. *Retention of the Bone in its Place*, consists, I think, in nothing more than a proper Bandage and Position of the Limb. To answer the first of these Intentions, we always

Third Intention is the well retaining it by Bandage. choose that of eighteen Tails, for the Convenience and Ease of daily dressing the Wound.

It is made of three Doubles of strong Linnen sown in the Middle, and divided at each End with two Cuts of your Scissars, a fit Depth.

There is also another Way of making it, and which, I think, better answers the Purpose; and that is, tearing off nine or ten Lengths of Linnen: These are spread with such an Edging to one another, as may make the Breadth of it suitable to the Length of the Limb fractured, then an entire Piece of Linnen of the same Length being put on them, they are sown well down together in the Middle.

In using this Bandage the Middle, or undivided Part of it, is to lay underneath, or as opposite

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posite to the Wound as you can; and that it may be kept longer clean, we are, after every Dressing, to interpose a large Compress between the Wound and it; and upon that Compress, again, it will not be amiss to

lay three or four other Linnen

Splenia, secundum Longitudinem, for the better Support of the Fracture.

All these to be retain'd with the Rowler, each of the *Lamine* enfolding the other regularly; and that done, the Limb is to have a Situation, soft, smooth, and equal.

I should, before applying the Bandage, have given the Dressing of the Wound, as what must precede it; but as it requires a daily Renewal, and as the Treatment will contribute very much towards preventing any ill Accidents, the Order and Alteration of such Dressings, from Time to Time, will be more methodically observed under our next and last Intention.

This is an Intention of large Scope and Implication, including in it the Method of Cure for every Accident those Fractures can be subject to; I shall insist here only on those peculiar to it, as COMPOUND, and refer myself for the rest to what has been before more amply delivered of SIMPLE Fractures.

Fourth Intention, is preventing and correcting the Accidents they are subject to.

When to the Greatness of the Hurt is joined either a bad Habit of Body on the Patient's Side, or ill Management on the Surgeon's, there frequently and almost unavoidably succeeds

ceeds Pain, Tumor, Convulsion, *Erysipelas*, or Mortification.

III Management of the Part is principally the Surgeon's Care to correct; and in which he should bethe more solicitous, not only because Negligence reflects Discredit, but because it must be his Skill, in a proper Treatment of the Part itself, that will most effectually prevent or remove all dangerous Symptoms: And for this End, when alarmed with any unusual Appearances, he should look back on the three former Intentions, how well they have been comply'd with; whether skilfully managed, or or not: Either the Bone lies uneven and distorted, having jagged Ends that become uneasy to the fleshy Part they rest on; or, what we ought still to be jealous of, some extraneous Body yet behind pricks on the soft and sensible Parts exciting those Symptoms: Or, lastly, that our Dressings are disagreeable, either as they respect the Wound, or the Fracture.

In Answer to these. First, if any acuminated Particles of Bone are, by their Contiguity, the visible Occasion of Pain, Tumor, or Inflammation, (as in large Compound Fractures they often are,) it is easily removed with Forceps and Scissars: But when this is not so apparent, (the Narrowness of the Wound preventing Inspection,) and yet the Symptoms still so increase, as to give just Apprehensions of it; or that some loose Body remains still behind covered from our Sight; I say, when we have this Mistrust, and thus reasonably grounded, the Question occurs, Whether the Wound should

should be dilated, or not, for the Removal of it: Because the present Circumstances of Tumor and Inflammation, in my Opinion, make a wide Difference from the Wound first receiv'd. For the discussing of this, it will be proper to state the Inconveniencies on either Hand: If such an Incision cannot be proposed, as will render the Search less difficult and disappointing, (as sometimes the Depth necessary, and Parts to be divided, make a Question, especially among large Arteries and Tendons,) then we must avoid it. The Symptoms will be aggravated from the very Thing we hoped a Remedy, adding Pain to Pain, and increasing the Fluxion: But on the other Side, if an extraneous Body be evidently lodged on such sensible Parts, as irritate to these Accidents, then dividing that Tendon, Nerve, or Artery, to extract it, will be of less noxious Portent, than permitting the Exaggeration of Symptoms that directly tend to the Destruction of the Patient.

My own Practice has been, after a diligent Search and Extraction at first, to leave the Remains to the Expulsion of Nature, by an Apostematation, assisting hereto, by anodyne Administrations, mild Cataplasms of *Farin. Avimar.* and a soft quiet Position; for there is no Fear that she will ever sit down easy with so inhospitable a Guest: Nature will, as she is wiser than we, effect the Exclusion of it in her own Time, by a gentler and easier Way, than making a blindfold Incision. The only Inconveniency of Abscesses here, (which is, indeed, a very great one,) is, that the Matter of them,

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in spite of any Means to prevent it, will slide between the broken Ends of the Bone, and cause them to foul and exfoliate; yet even this may in a great Measure, be avoided, by making a Vent in some depending Part, and diverting the Discharge; so that on the Whole, I conclude, it is sometimes safer trusting to Nature than to our selves.

Secondly, The Dressings to the Fracture may be hard and ill-apply'd; which, if so, must be amended in those Respects, or our immediate Application to the Wound, may be disagreeable, and excite Pain, &c. by being improper in their Nature, or unseasonable in their Use.

All those are improper in their Nature that harden the *Eschars*, and render the Wound crude and indigested, such as spirituous and absterfiv Applications, which Serjeant *Wiseman*, in his *Treatise of Gun-Shot Wounds*, condemns in a plain parallel Case; for says he, Take an Issue made by a Caustick, and after you have cut through the *Eschar*, continue to dress it but a few Days, with a Pea dipp'd in *Tinct. Myrrh.* and it will not be unlike those Wounds, inflame and tumefy, if not gangreen. What has led some to this Practice, he says, was the Blackness and ill Colour of those Wounds, which did not ill resemble a Mortification; but though there may be an Extinction of Heat, it is superficial, and very unlike that. And I am convinced, the best and quickest Way of recovering it again, is, by good Fomentation, to cherish the Heat; and immediately to the Wound itself apply Lenients and Digestives:

But

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But these again, we must observe, will be unreasonable in their Use, when they increase the Matter too much, or give Rise to a *Fungus*.

• For a Digestive, *Rx Linim. Arc. Ung. Bas. & Hbj. Ol. Tereb. ℥ij. Hyperic. Lini. & ℥iv.*
Or, *Rx U. Basilicon ℥iv. Tereb. Ven. Linim. Arcei. a. ℥ij. Ol. Hyperic. ℥℥. M.*

This (having first dressed the Bone dry) is with Pledgits to be apply'd warm over the rest of the Wound, a Compress out of *Spt. Vin.* is to cover them, and then your *Splenia* and Roller, as before directed.

When the *Eschars* are separated, Detergents must succeed to check the Increase of Matter; Incarnatives and Desiccatives to them again in their Order. But of this, more in the following Observations.

Example of a Compound Fracture of the Leg.

A Man aged Twenty-eight, received a Compound Fracture of his Right Leg, by a Splinter in an Engagement with the Enemy: The Wound was large and commodious for Extraction; and through it I presently brought away several loose Pieces of Dirt and Bone: There was one larger than the rest, which not being separated from the Membranes, I replaced, and found afterwards to unite with the Whole. After having cleared the Wound of *Extranea*, I found the Ends of the Bone near two Inches asunder: A Distance that surprized me not a little; but having known as large a Void to fill with *Callus*, I resolved to wait the Event of Nature in it, and preserve

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preserve the Limb, if possible. The Bone I dressed with *Traut. Myrrh.* the Wound with Digestive, and the Fracture with the same Compresses and Bandage as above, taking particular Care in the Situation of it, that the Ends of the Bone pointed to each other, and that the Whole lay smooth. The better also to keep off a Fever, with its Train of Consequences, I bled him, kept him to diluting Drinks and spare Diet.

In a Fortnight's Time, I found some of the *Eschars* separated, and with them, at several Times, Officles: He vary'd in his Disposition during this; and was sometimes very easy, and at other Times full of Pain, and feverish. At length, both increasing on us, a Fluxion of Humours at once distended the Limb from the Knee to the Ankle, a considerable Quantity of *bloody Serum* discharged from the Wound, and some small *Vesiculae* arose about it.

I began now to repent of not having amputated this Leg at first; and had done it now, if his Fever and Weakness had not put me in Despair of Success; and therefore almost hopeless of any good Issue, I applied round the whole Limb the Cataplasm of *Farin. Avinac.* Vide *Appendix*; and prescribed internally the *Cortex*, as follows;

R. Pul. Cortic. Peruv. ℥ij. Syr. de Mecon. q̄. F. bolus sexta quaq. hora sumend. Superbibend. Cocteur Jalap. Analeptic.

This I found, on the first Opening, had made a vast Discharge through the Pores, and considerably every Day after; which, for that Reason,

son, I continued alternately with Fomentations, till the Limb was entirely disburthened. When the Wound became clean, the Tumor fallen, and the Fever gone off, I made him a laxative Drink, and returned to Incarnatives: These filling the Wound too fast, gave me a tedious Trouble again in the Exfoliation; but that at last being obtained, we cicatrized the Whole in about three Months.

II. *A Compound Fracture of the Thigh.*

In the late glorious Wars for the Spanish Monarchy, in the Year 1710. we were returning on one of our Stationary Voyages from Genoa with a Packet to the Spanish Court at Barcelona, and off the Harbour of Toulon, met a French Merchant Ship of twenty-six Guns, laden from the West-Indies, and, luckily for us Captors, had touch'd at Cadiz, to add eight or ten thousand Dollars to her Cargo: Observing us a Pink, they dissain'd going at first out of their Way, till too late, they catch'd the Tartar.

Three or four Days after the taking of this Prize, we had a Prisoner brought on Board with a compound Fracture of the Thigh: The Bullet had entered on the upper and outward Part, wounding the *Membranous*, and other Muscles, but did not pass through. Before his coming here, the *French Surgeon* had extracted some Bits of Garment that was carried in by Force of the Blow; but the great Pain that continu'd, especially on any Motion of the Limb, the Tumor, Inflammation, and Way of receiving

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ceiving the Wound, gave both him and me just Reason to suspect the Bullet, and other foreign Bodies, still lodged within, confirmed every Day more to us, by the Pain and Fever increasing, and abundance of bloody *Serum* from the Wound.

As the Case appeared with all imaginable Danger to the Patient's Life, I proposed an Incision, as thinking we could never incur worse Accidents (how deep or large soever we made it) than what threatened us already: But the Gentleman being of Opinion, such Incision would be giving unnecessary Pain, and that the finding the Bullet under these Circumstances would be almost, if not altogether as difficult after, as before, we declined it, and gave internally Anodynes, and the *Mixtura Febrifuga in tempestivis*.

To the Wound we used a short soft Tent, moistened with a Digestive, an Embrocation of *Ol. Rosar.* warm, and the *Cataplasma resolvers*, the Bandage for a compound Fracture, and a proper Situation.

The Pain notwithstanding became in a manner agonizing; and what compleated the Misfortune, instead of Incision, a thick dry Tent was thrust in to dilate the Wound, and give free Vent to this bloody *Serum*, which was now in greater Abundance.

This had all the ill Effect that could be; the Tumor and Inflammation were extravagantly increased by next Day, the Limb convulsed, and a *Spasmus Cynicus* followed.

We made a warm Embrocation of the affected Part, and down the Spine, with *Ol. Ruta Succin.*

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Succin. a. p. a. breathed a Vein, and gave a quieting Potion; but to no Purpose: He continued so twenty-four Hours, and died the fourteenth Day from receiving his Hurt. What I shall further remark from this, and other the like Observations I have met with, is, First, that in Gun-Shot Wounds of the Nervous, or other very sensible Parts; their worst Symptoms seldom appear immediately, because, as I take it, the *Eschars* supply for the present, that Fence they naturally had against external Injuries; but when these are separated, they become exposed to the Intrusion of Air, and more injurious Applications, (scarce any Thing agreeing with them,) and then Convulsion, &c. ensue.

And, Secondly, When Convulsions do happen, particularly the *Spasmus Cynicus*, it is of fatal Prognostick, even when the Wounds to all outward Appearance, are very inconsiderable. This I have known prove true, when the Gun-shot Wounds it was subsequent to, were in the Leg, the Foot, the Jaw, and other Parts of the Body.

III. A Compound Fracture of the Cubit.

T. T. received a small Shot through the inner Part of the Cubit, about four Fingers Breadth below the Joint, fracturing the *Radius*. After I had extracted what Bodies I could find, that were carried into the Wound, (which were many,) I dressed each Orifice with a small moist Tent in a Digestive, applying an Emplaster, Compress, and Bandage, which has been already mention'd, and placed it to his Breast: For

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few of the succeeding Days, I made use of a Fomentation, and embrocated the whole Fore-Arm with a discutient Liniment, to further Digestion, and resolve the Hardness of the Tendons that accompany'd it : But Pain increasing, an Inflammation spread itself to the Joint, possessing almost the whole Inside of the Arm.

I made several Scarifications round this inner Orifice, and fomented it well; which had the desired Effect, gave a Breathing to the Wound; and in a few Days the external *Eschar* separating, the Tumor dissipated. I then altered my Dressings, by Addition of *Bals. Virid.* to mundify and hinder too quick a filling up of the Wound, which would have impeded the Extrusion of some little Jags of Thread and Rag, that I now and then observed to come away with the Discharge. When that Fear was over, I threw out the Tent, and cicatrized.

I shall finish this Observation with an Excursion on the Use of Tents.

Of TENTS.

Mr. Belloste condemns them heartily: He says, the End proposed by them, viz. keeping open the Orifice of the Wound, conveying Medicines to their Bottom, furthering the Extrusion of extraneous Bodies, and imbibing the Matter generated, are so far from being performed, that they are an Impediment to it. And to prove this, he abounds with Relations of the

Mr. Belloste's
Opinion on
Tents. *Vide*
Hospital-Surgery,
Vol. I, p. 1, &c.

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the contrary Consequences, to wit, great Pain, Inflammation, Convulsions, Abscesses, Gangreen, sinuous and fistulous Ulcers.

But notwithstanding his Authority, I think they are not to be *universally* exploded; a soft and short Tent, for a Time, is in many Cases not only useful, but necessary. Those ill Symptoms, he, in so many Observations, repeats to have happen'd from them, have had other conjoint Causes, and when apply'd to Tents, should rather have been ascribed to their too great Length, Thickness, Hardness, or Continuance; for in those Respects, they may be, and frequently are, exceeded to a Fault.

I shall reduce the Whole of this Subject into two general Cases; where the Use of Tents seems preposterous; and yet in which they are the most (though inexpertly) used; and that is, when the Quantity of Matter in a Wound or Abscess is very large, or when it is little or nothing.

In the first Case Tents manifestly do Hurt, the Matter being *pent in, as it were, with a Spigot*; and though we should make them smaller than the Diameter of the Orifice of the Wound, yet they, by imbibing the Matter, swell up to it, and equally hinder the Vent and Eruption; and from this Retention, both on account of the Pain it gives, (and also of that Maxim, *That Corruption breeds Corruption*,) the Quantity will be increased, and of Necessity translate it self (when thus stopped) elsewhere; and so Apostemation on Apostemation may prove the

Where they
are proper.

Where im-
proper.

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of our Inexperience: Whereas, throw aside Tents, and only make good an advantageous Compression in your Rowling, and there is no Fear of the Wound or Abscess closing, before it is emptied of all or most of the *Pus* or *Sanies* collected; but if there should, Dilatation by Incision better secures our Fears, and will be a much more eligible Expedient against it than Tents.

Again, in the other Case, when there is little or no Matter, and the Wound is what we call indigested, the Hurt that Tents do is obvious; for as it is the Pain that attends Wounds which makes them, for the first Days after Infliction, a little inflamed and tumify'd, and which, in other Words, is but the crowding of Humours, or Distention of the Vessels from that Attraction, soft and easy Applications dispose the Wound to digest, and those Accidents to disperse and dissipate: But if by a wrong Method, (such as Tents,) we pervert Nature's Operation, the sensible Parts are further irritated, and Pain increased, &c.

It will be necessary then, in these two common Cases, and also in very sensible Parts, wholly to abstain from the Use of Tents; but in penetrating, and in deep Flesh-Wounds, where the Quantity of Matter generated will of Necessity be out of Proportion to the outward Orifice; soft short Tents help the Digestion of the inward Wound, further the Extrusion of extraneous Bodies, and convey the Medicines proper to absterse, cleanse, and heal.



CHAP. II.

Of FRACTURES of the SKULL.

FRACTURES of the Skull are, perhaps, more abstrusely treated of by Authors, than any other Part of Surgery. All who have hitherto writ on them, have rather increased, than removed the Difficulties in the Way to the right Understanding and Management of them: They have multiply'd a Parcel of insignificant Terms and Names, without any Ideas annexed to them; and falsly deduced the Symptoms appropriate, and Necessity of the Operation subsequent thereto. This I shall endeavour more fully to explain in the Sequel, and substitute a Reasoning and Method more adequate to Truth and Practice.

Sorts.

Sorts. Ancient Authors have reckoned up, or rather divided these Fractures into a Multitude of Sorts, distinguished by proper Names; which, *M. Dionis* says, he has reduced to twelve; and those again into three, to wit, *Incisions, Cracks,* and *Contusions*: Of these, the former have more ordinarily the Process of Wounds; and unless by the latter, be meant *Depressions*, it is an unintelligible Term: And therefore I chuse to make my own Division, viz.

Division into
three Sorts.

A *Fracture* or *Fissure*, a *Contra-Fracture* or *Fissure*, and a *Depression*: Names which carry their own Explanation, and comprehend every Sort; which, as they stand further distinguished, express more a Variety of Cause than any Thing else, and are mere Amusement. Of these, the *Contrafracture* or *Fissure* is something particular; being opposite to that Part of the Skull where the Blow was received; and is supposed to happen from a Concussion of that small Portion of Air contained within-side, (where the Force of the Blow driving, and the *Sutures* being very close, it flies to the opposite,) and meeting Resistance there, occasions the Fracture. What may come under this Denomination also, is, when the second Table is broke, the first remaining whole: A Case that may happen, and to which, (*vide* p. 71.) the second Example at the End of this Chapter has some Resemblance.

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Of Fractures in General. 27

The Causes of Fractures, are any great Blows, or Falls. The Convexity of the Skull is an additional Strength against them; because the Pressure, in such Strokes, declines towards the Cohesion of its Parts; but still not sufficient to overcome every Violence.

The Causes of fractured Skulls.

The Signs of a fractured Skull must be separated into those that immediately happen, and such as succeed not till after a Time. Those that immediately happen, are either evident to Sense, or deduced from Reason: They are evident to Sense, when the Largeness of the Wound makes the Fracture visible, or is sufficient for a Discovery by the Finger or Probe, or when without a Wound, the Depression is plainly felt. All other Signs accompanying them are Deductions from Reason, and are taken (when the Scalp is entire, and those Demonstrations of Sight and Touch wanting) from a Comparison between the Circumstances of receiving the Hurt, and the Symptoms conjunctly.

The Symptoms attending them immediately.

The Signs that apply to our Reason, are Vomiting, a Dizziness, and Bleeding at the Nose or Ears; and the more violent are, when (with them) the Patient also lies senseless, stupid and speechless. All, or some of these follow a Fracture immediately, and the Measure of a good or bad Prognostick is taken according to their Degree, and the Time of their Continuance.

D 5

Those

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Symptoms
more remote.

Those that arrive not till after a Time, are, *First*, The Patient's feeling a Pain on biting any hard Body; and, perhaps, an often reaching of his Hand to the afflicted Part. *Secondly*, When a Dulness of Memory and Understanding, or a *Coma* follows. And, *Lastly*, when Fevers, Deliriums, Convulsions, or Palsy, which do often unhappily succeed, and are the Forerunners of Death.

It is the first Order of Symptoms, *viz.* those which presently appear on the Hurt, that I am at present concerned to examine; and what I am able to say on them, in Reference to the Prognosticks and Cure, I shall deliver by way of Answer to the following Questions:

A Concussion
and Fracture
have the same
Symptoms.

First, That since the Signs enumerated will equally appear in a *Concussion*, whether it be, or be not attended with a Fracture, how shall it be known when they are the Indications of such an Accident, and when not?

Secondly, Why a Concussion attended with those Symptoms, should not require the *Terebra* as much as a Fracture? In answer to the first of them; though it be true, that the same Symptoms happen in a Concussion with or without a Fracture, and that there is no Certainty of arguing from one to the other: Yet if on examining and comparing the Blow with the Symptoms, they are severally found great and violent, it is incumbent on us to dilate the Wound for more certain Information: And when we do this,

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this, it should be rather by a cross Incision, than any other; because if right in the Conjecture, it can with Ease be stretched to where the Fracture tends; or if not, 'tis a Wound (of any that are proposed for this Purpose) the most easily reunited.

To the latter Question, viz. Why a Concussion, under the same Symptoms with a Fracture, does not equally require the Operation of the Trepan; we cannot resolve or determine ourselves as to any particular Case better, than by consulting what is proposed by the Operation, the Reasons for, and the Objections against it.

The chief Design of this Operation, is said to be for discharging Blood or Matter extravasated between the inner Superficies of the Skull and *Dura Mater*; the Retention of which would occasion these Symptoms we have afore recited, sphacelate the Brain, and kill the Patient.

What is proposed by trepanning the Skull.

Now this being the Foundation on which the Operation of the Trepan is grounded, the Truth of it should; methinks, be better established, to vindicate that Practice in every Fracture of the Skull, than, I must confess, it appears to me to be.

For,

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An Extravasation between the Membrane and Skull, no certain Consequence of a Fracture.

For, *First*, That such an Extravasation is there, or does inevitably follow on a Fracture, I cannot, from my own Experience, so constantly assent to. I have met with such a Case once; but it was from a Laceration of the Membrane, and mortal: But from others that have

happened under my Care, (and nigh the Sutures too,) I am convinced such Extravasation between the Skull and Membrane is seldom the Consequence of a Fracture: And if so, then whatever may be said in Defence of it, when to relieve the Membrane so oppress'd, yet here (which will be the Case of far the greater Part of Fractures) the alledg'd Necessity of the Operation ceases, at least it proves, in such, of no Significancy to their Amendment.

Secondly, If an Extravasation must follow, both on a Concussion, and a Fracture, (as from equal Symptoms, we have equal Reason to suppose,) then there seems a greater Necessity for the Operation in the former, than the latter, though not practis'd; because the latter may possibly now and then be large enough for the Transmission of such extravasated Blood, and answer the End of a Perforation: Whereas in a Concussion without a Fracture, we are sure it must be fatally confined.

Thirdly, Such Extravasation must happen either from the Skull lacerating the *Dura Mater ab extra*, or an Eruption through it *ab intra*; which, considering the Toughness of that Membrane,

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Membrane, the Stroke should be mortal that affects it.

Fourthly, It is difficult to conceive, after allowing such an Extravasation, how it will account (abstractly consider'd) either for immediate or subsequent Symptoms.

And, *Lastly*, I would be resolved concerning this Extravasation, whether it of Necessity must lay near the Fracture, or not sometimes in a distant Part? Or, that if at first it were nigh, yet while it continues fluid, it may not settle farther, especially to Parts depending? And how, when it is coagulated at a Distance, the Operation conduces to its Discharge? For the reconciling of these preliminary Queries will be always necessary to justify the Operation.

I have only started the Objections, and shall leave their Removal to others more convinced of the Necessity of the Operation in all Fractures than myself, and proceed now to explain my own Notions about the Original and Cause of these Symptoms, with a Method more suitable to their Relief.

The Symptoms fractured Skulls are incident to, whether immediate, or at Distance, do not proceed from Fractures separately considered, but from the Concussion made at the same Time in the Brain by the Blow that occasioned them; for the Substance of the Brain being a Congeries of Vessels of soft and fine Texture, the Violence that can break so solid a Bone as the Skull, (that contains it,) must indisputably rupture some of those Capillaries, and
Whence these Symptoms arise.
cause

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cause an Extravasation within, at the Fountain of Irradiation and Efflux of the Spirits: Whence in the Beginning comes Vomiting, Bleeding at the Nose and Ears, Stupidity, and Speechlessness; and whence, in further Process of Time, if proper Means of Relief be neglected, come Comas, Senselessness, Lethargies, Deliriums, Palsies, and Convulsions: For as the Original of a Nerve or Nerves, happen to be divided, obumbrated, or affected with any Heterogenelty of Particles, it is an undeniable Consequence, that the different Sense or Actions they serve to must suffer and fail, or be involuntarily and preter-naturally exerted.

Mr. *Turner's* remarkable Case *V. Turner's Surgery, Vol. II. p. 23.* confirms a great Part of what I have advanced. He says, That although the Depression in that fractured Skull he was called to, made a Cavity that would almost hold two Ounces of Liquor, (which must needs have made a prodigious Stretch on the *Dura Mater*,) yet that the Membrane appeared fair after the Operation. Further he says, That about the tenth Day from receiving the Hurt, he perceived a greater Discharge on the Roller and Dressing than could be expected; and upon Search, found a foetid Matter erupting through the *Dura Mater*, from the Substance of the Brain. Lastly, the Patient lived from February to May, discharging more or less of this Matter, without any Symptoms of very ill-boding Prognostick, till two or three Days before his Death, and then was seized with Convulsions.

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The Learned assign the Cause of Convulsions to an Admixture or Meeting of Particles incongruous and disagreeable to the Membranes, Nerves, and Nervous Fluid. This Incongruity, as some Causes exist, (especially Poison,) lie in such Particles, being sharp-pointed and vellicating, (bearing some Resemblance to those external Instruments which more certainly affect it by pricking on them,) and seldom in Repletion or Exinanition, particularly as to these which succeed Fractures of the Skull. We find that Convulsions do not immediately seize, but after a Time, when it may be supposed the extravasated Blood has attained such an Heterogenity; and the same sort of Particles communicated to the Blood, produce Fevers, and in the Circulation Shivering, Vomiting, &c. Symptoms, which, as they appear weaker or stronger, are judged a less or greater Concussion.

The Cause of Convulsions here.

They do likewise ascribe Apoplexies and Palsies to such an Effusion and Eclipse of the Spirits, though that external Force, which advantages the Argument here, be wanting.

From the Whole, therefore, I would make this Deduction, That if the Dulness, Slumberings, and Stupidity, often seen at receiving Fractures, approach in their Nature and immediate Cause nigh to that of an *Apoplexy*, i. e. the Extravasation is within side the *Meninges*, and not without, then like that it is reasonable to conclude,

With the Judgment that may be form'd from them.

Re-

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Revulsions will contribute more to the Cure, than the Operation of the Trepan can. And what confirms me in this Sense, is, that I have known both Fractures and Concussions (especially the latter) to have been relieved and recovered without trepanning; and that by large Bleeding, *Enemas*, Purges, Fontanels, and nervous Administrations, which derive the extravasated Matter from the Brain, carrying it off by the Bowels and Emunctories, or fixing an Abscess on some less principal Part; and sometimes the natural Passages, by the Nose and Palate, assist to this Purpose; much more likely so to do, when both Cold and Air is excluded; which all allow to be injurious to the Membranes and Brain.

Though not one in five of these Fractures call, in my Opinion, for the Operation, yet there are some Circumstances that may make it more defensible at one Time than another.

In what Cases Trepanning is necessary.

Any extraneous Body sticking fast in the Bone, or a *Depression*, whether of one, or several Pieces, the former cannot be removed, nor the latter elevated (it's said) without it: And besides, if at any Time an Extravasation may be expected, it is most probably when the Bone presses on the *Dura Mater*: And yet even here, unless a Man could forsake his Sight and Reason for Authority, there arise some insuperable Difficulties in an immediate elevating any depressed Part of the Skull.

First,

First, The depressed Part commonly remains firmly contiguous with the Whole; and being solid in Adults, will, like Iron, or other hard malleable Bodies, require as much Force to straiten, as bent it: Besides, in restoring to a Sphericity, we are narrowing the Diameter; which consequently augments the Difficulty.

Difficulties in elevating the depressed Skull.

Secondly, The Elevator it is attempted with must be of fine Make, or it will not be so safely introduced between the inner *Lamina* and *Dura Mater*; and the finer the Instrument, the less Force can be used; or if more could, there is still left a greater Obstacle to contend with; for the *Diploe*, which divides the *Lamina* of the Skull, will intercept and hinder any Effect of it on the outward Table.

The *Tresfond* (an Instrument like a Cooper's Piercer) or the *Terebellum*, should be fixed on the depressed Bone, to help, in Conjunction with the Elevator, to raise it; but altogether is full of Difficulty. It may be asked, to what Purpose then is the Skull traphined at all, either when any extraneous Body strikes there, or when depressed? Why, in the first Case, the Body may be so fixed, as to be past any other Method of Removal: And in a Depression, there is Danger of Extravasation, and accelerating of fatal Symptoms, judged of by the Depth and Bearing which the Bone makes on the *Dura Mater*. In the first Case, it is visibly wanted; and in the latter, I believe it will be thought no ill Practice to repeat the Operation of the Traphine, until the whole depressed or central Parts are removed, as threatening a greater Mischief.

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The Operation.

The Operation, when undertaken, is directed to be *near the Fracture*, in order to raise any Part of the Bone depressed depending, for the more favourable Discharge of what is extravasated: *In a close Place, and by Candlelight, Air*, according to the Aphorism, being an Enemy to the Brain and Bone: *Quickly* also, because procrastinating is dangerous; and *not on, or nigh*, the Temples, Sutures, or Productions, in the Middle of the Occipital or Coronal Bones, because the *Dura Mater* strictly adheres to them, and there would be Danger of tearing it with the Instrument. If the Bone should stick, clear it with the *Myrsifolium*.

The Night before the Operation we are to make our Way clear to the Skull, by extending either Line of that cross Incision, (supposed to have been made at first,) and separating entirely one or more of the Angles, as shall be thought requisite to answer the Purpose before us.

It is usual to stop the Ears with Cotton, for preventing an ungrateful Sensation; and then smearing the Crown of the Trepan with Oil, for its easier Motion; apply it first on the Skull, with the Pyramid or Pin in, till an Impression be made, and then leave it out; lean hard on the Top with the Left Hand, and turn round with the other.

The Trepan in the Beginning is best for Dispatch, and fixing the Crown; but the Traphine is safest, to conclude the Operation with,

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with; because the *Manubrium*, in this latter, is fixed, and moved from Right to Left, and so back again at half Turns; the Conveniency of which, for finishing beyond the other, is, that we have a greater Command of the Instrument; and as the Perforation is found nearer through in one Part than another, we can accordingly bear more on the thickest Side, to bring it to an Equality; and the further we advance, the more this Care will be wanting, least the Instrument, at the End of the Operation, should break through, and touch the *Dura Mater*, (which, if not contiguous, yet swells by the Pulsation of the Brain close to the inner Superficies of the Skull;) or else, least it break off some Particles that might prove equally offensive.

The Teeth of the Crown touching the Membrane, is, indeed, in a great Measure, guarded against by the Diameter enlarging upwards; and the best Caution we can take against the latter, is to remove the Instrument frequently, to clean it, and the Skull from Dust with a little Feather-Brush, and to search the Depth of the Bore with a Probe, that so the Surgeon may cut equally, by being informed at what Point to press hardest.

Sometimes the Piece comes out entire; and sometimes the two Tables are divided. This the Operator will perceive, and take away the first, when loose, before he proceeds on the other: And both removed, the Perforation is to be smoothed with a *Lenticular*, slipping first an unguous *Sindon*, (i. e. a Bit of fine Linnen cut round, and rather larger than the Perforation,)

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ration,) whose Edges may slide between the Skull and the Membrane, to catch the abraded Dust and Particles.

The proper Dressing.

The Dressing to the Membrane (after the Operation is compleated) should be a *Sindon* dipped in the following Mixture made warm; and before introducing, should have a single Thread through the Middle, for the easier bringing it away.

R. Resin. Com. ʒi. Ol. Rosar. ʒij. M. Or, R. Spr. Vin. vel Tinct. Myrrh. Moll. Rosar. a. p. e.

The Perforation must be fitted with a Dossil of dry Lint, and the whole Interspace of the bared *Cranium* with others: To the wounded Scalp, some Pledgits of a Digestive; and over all, a good Compress, and the Head Bandage. *The Head-Bandage is a double Roller, the Ends of unequal Length, and beginning on the Forehead, you carry it behind; with the shortest End you pass backwards and forwards, till the whole Head is covered; and the longest constantly going round, binds at every Turn. Over this may be a Woollen Cap.*

The Prosecution of this Cure may require some Variation of Method; which I shall animadvert upon, in a Word or two, as it may respect the Membrane or the Bone.

From the Membrane (*crassa Meninx*) it must be noted, an Incarnation or Substance arises, that fills the Perforation, and does in Time harden to a *Callus*. It begins to appear in about a Fortnight.

How a *Callus* is formed here.

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night; and is at first nothing but a Transudation of Blood from the Capillaries dispersed through it, and may be furthered or hindered in too quick a Growth, partly as we dress with the first or last of those Receipts above. How this Transudation or Supply after trepanning comes from a particular Part of the Membrane, when the rest remains smooth, seems to be the wonted Compression of the Skull being taken off, whereby the Air-Globules circulating with the Blood, swell the Capillaries, and thrust out their Contents here.

The Bone being long exposed in these Cures, does usually exfoliate; but if we would not be wanting in our Endeavours to prevent it, then we must rasp, and pierce the *Cranium* a Line or two (or to the *Diploe*) at several Places with the Pin of the Trepan, and for a bloody Matter will exsude, that in a little Time will cover the Whole: Dressings assistant thereto, may be Pledgits of the following

How an Exfoliation may be prevented.

*R. Sp. Vin. in quo Pul. radic. Aristoloch. vel
Irid. Infusum. & Mell. Rosar. q.s.*

If an Exfoliation cannot be avoided, we may allow a Month or five Weeks to perfect: The thrusting it off then, is by a like fleshy Substance that arises underneath, and which daily increases till the whole Vacancy be filled, and make one uniform Figure with the rest of the *Clypeum*.

When

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When a new Flesh has spread the Membrane and Bone, the greatest Difficulty left to encounter, will be preventing its Fungosity, either in the Hollow, or the Lips of the Wound. The best Means for this will be Evacuations, Dieting, and (externally) dry Dressings, filling the Space such a Height, as the Bandage may press and resist its Growth; or, if that avail not, *Escharotics*.

Lastly, As the Wound is filling, we should begin timely with our Desiccants, and heal from the Edges; *U. Diapomphol. Tutie*, or *Desiccat. Rub.* will do. And when the Cicatrix is complete, it remains on us for some Time to defend the Part against the Injuries of Cold, Blows, and other Accidents.

Instances of Fractured Skulls.

EXAMPLE I. ABR. MASCOLE.

A fractured Skull cured without trepanning.

This and the two next Observations happen'd in that general Engagement our Fleet, under the Conduct and Command of that great Admiral Sir George Roke, had with the French off *Malaga*, 1703. A Fight, that on our Side appeared to me directed with consummate Wisdom and Courage. The Wound here was large, and laid open the Fracture to Sight on the Right Sagittal Bone. But the Patient appeared frightened and melancholly with the Blow, and would not, on any Representation

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Representation of Danger, admit of the Operation, tearing off the Dressings which were made to his Wound for several Days together.

His Hands were tied, to prevent, as much as possible, so delirious a Behaviour. He was blooded every Day for a Week, sometimes in the Jugular, and sometimes in the Arm, or Foot; and had a Fontanel cut *inter Scapulas*.

Without any other Means, the Wound in a Month, was contracted to a small Compass, and the *Delirium* off: But as it became seemingly healed, the Matter increased upon us, and having a soft Tumor about it, gave Reason to suspect a Translocation of Matter from within, and a Foreboding of very bad Consequences; but it proved only precursory of an Exfoliation; and, in two or three Days, having extracted all the loose Bone, the Matter lessened, &c.

While I knew him, he continued troubled with a Giddiness, Pain in his Head, and Epileptick Fits; (the latter, perhaps, rather imputable to the Fright, than Fracture.)

EXAMPLE II. JOHN USHER.

This Person was struck by a short Splinter of Wood, in the Forepart of the *Os Sincipitis*: No Symptoms of a Fracture followed, but to Appearance, as well as ever he had been in his Life.

We dilated the Wound, in order to extract this Splinter with a Forceps, or other Instrument; but finding our Endeavours in vain, and not being able to judge at what Depth it stuck, or the Accident that might ensue from leaving it

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it any Time, we thought proper next Day to apply the Trepan, and found an odd Circumstance after the Operation; for the first Table being removed, the inner appeared depressed to a pretty large Circumference.

The Operation was repeated through both *Laminae*, and the deepest Part of the Depression, till the Splinter was brought away. We found no Extravasation; and dressed the Membrane Perforation, &c. in the Manner which has been already recited.

Fourteen or fifteen Days passed without any remarkable ill Symptom, and then the Patient was suddenly seized with a great Pain in his Head, soon followed with a Sopor, Stupidity, and Looseness: I blooded him, gave an easy Purge of *Pul. Rhubar.* kept him to the white Decoction, and some volatile Smells; but about the twentieth Day, he was farther seized with a Palsy of his Tongue, and Left Arm, and died in twenty-four Hours after.

From the former Instance we see the Probability of Success without the Operation, though attended with Symptoms that are said to indicate it. And in this, how fallacious the Dependence on it is, though there seemed nothing wanting but a skilful Management and Direction of the Operation itself.

EXAMPLE III. JOHN BULL.

This was a large Fracture and Depression by a Splinter: The Wound was immediately stretched with a cross Incision, and next Day the Operation performed.

I passed

I passed the *Elevator* after finishing between the Membrane and Skull, attempting to raise the depressed Part; but as much in vain, as if it had been laid under a Corner of *St. Paul's*; nor is it reasonable to expect otherwise: For if a depressed Part has so firm a Contiguity, as to bear the Pressure of Trepanning, how absurd must it be, to think of raising it by so weak an Instrument?

Finding myself (not unexpectedly) disappointed, and that the Depression rested so close on the *Crassa Meninx*, that it was with some Violence the *Sindon* could be thrust between: I resolved to take away with the Trepan as much of the Depression, as seemed to threaten a dangerous Consequence, by compressing on that Membrane; and completed it at three several Perforations more. On the *Dura Mater*, immediately under the Depression, were found some very small Globulations of Blood.

We gave the usual Dressings to the Membrane and Bone, and in a Fortnight, found these several Alterations, *viz.* those little Coagulations to mature off, the *Dura Mater* to spread with a ruddy Substance, the exposed Part of the Skull to grow discoloured; and, after a longer Communication with the Air, and Medicine, came (to the best of my Remembrance) more flexible, and yielded the small remaining depressed Part to Elevation. Whence I would ask whether when Exfoliation is inevitable, it is not better to assist and forward the Mollification of the Bone, by unctuous Applications?

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Our Business, in the Progress of the Cure, was to prevent too quick an Increase of Flesh, and to wait for the Exfoliation. The first we helped by dry Dressings and a Compression; the latter, Nature effected in about thirty Days, a new Incarnation from beneath thrusting it off, and gradually filling the Vacuity.

After Cure, he continued the Remainder of the Voyage subject to Pain and Vertigo.

EXAMPLE IV.

I was sent for to advise about a Lad that had fell from the Main-Yard of a Ship, and who was supposed to have fractured the Skull, he having vomited, bled at the Nose and Ears, and besides lay speechless and insensible. On the Forepart, near the *Frontal Suture*, was a small Wound, the only Hurt that could be perceived through the whole Scalp; which was laid open by a cross Incision a considerable Length, and the Patient prepared by Bleeding for the Operation.

Not discovering the Fracture, it was however omitted some Days, until a Continuance of the Symptoms made us apprehend the utmost Danger, and put us on the Performance, to avoid Reflection, the constant Attendant of Miscarriage and Omission; but found the *Dura Mater* clear of any Extravasation.

Our Dressing was a Sindon out of *Sp. Vin.* and *Mell. Rosar.* a little Ball of the same to fill the Perforation; and all the rest of our Dressings Dossils of dry Lint, excepting only a large Pledge

get

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get spread with Liniment, for the easier bringing them off, Compress, and Bandage.

About a Week after, the Patient having been often observed to lift his Hand towards the hinder Part of his Head, we found there, on Search, a Tumor with Matter collected in it, as appeared on opening; and what was more surprizing, a Fracture that gaped wide enough to pass a Probe through, and stretching a great Length on the *Os Occipitis*: Here we apply'd the Traphine again, imagining with Reason, the Discharge was *ab intra*, and found some Maturation then, and more next Day. That the Membrane should be punctured, is plausible and practicable, for the Relief of the Brain, which thus is in danger of Sphacelation; but whether in the present Case, it could turn to any better Advantage than the imperceptible Passage that Nature had already made, was a Question: We thought not; and omitted it, shaved the Head, blooded, and used spirituous Embrocations, and internally Cardiacks. He continued speechless and emaciating until the third Day after the last Operation, and died.

EXAMPLE V.

A Concussion of the Brain. A young Lad standing in a Boat, under the Bow of a Ship, a great Dog accidentally fell from out of her, and brought his Head and the Boat's Thwart together. He bled at the Ears and Nose, and kept doing so by Intervals for twenty-four Hours; Speechless also, and insensible, yet no
E 2 Wound,

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whole Wound or Appearance of Hurt through the Head,

I took away $\frac{3}{4}$ xij. of Blood immediately, had the Head shaved, and rubbed his Temples and Nostils with an equal Mixture of *Sp. Lavend.* and *Sp. Sal. Vol. Ol.*

The next Day I blooded him again, applied a large Vesicatory to his Neck, and made a counterpoising Julap. But this he constantly regurgitated, as often as he attempted to swallow.

On the third Day, I repeated Venesection, injected a stimulating *Enema*, and towards Evening he spoke; which was the first Time from his receiving the Hurt.

We daily after this, found some Progression in the Recovery; but the Stupidity wearing off slowly, I cut him an Issue, and left him to the Use of Errhines, and have Reason to think they were of no small Benefit.

I could instance several others during my Service in the Navy, who, on Falls or Blows, have had all the Symptoms of fractured Skulls, viz. Vomiting, Bleeding at the Nose and Ears, clotted Blood from the Nostils, &c. and yet have done well without the Operation; but all of them having bore some Similitude to one or other of the foregoing Examples, it would be Prolixity to relate.

ARTICULATIONS

CHAP. III.

Of LUXATIONS, or DISLOCATIONS.

TO understand Luxations, it is principally necessary to be instructed in the Articulation of the Bones, in what Manner they stand in respect to one another; that so we may not only know the Accidents we are called to readily, but the Remedies they are capable of. In the Limbs, whether perfectly, or imperfectly luxated; how, and to what Degree Extention is necessary; that we make it neither needlessly, nor violently; and in other Parts, the most conducive Methods of Recovery. Yet in none of these do I propose to say every Thing necessary: The Chapter is only Notes, and designed to imprint some better Knowledge on the Subject, than it is apprehended, any Thing written hitherto has done.

The Articulations are by *Synchondrosis*, or *Diarthrosis*, i. e. for an obscure or a manifest Motion; the former by intervening Cartilages (as the *Vertebrae*, *Costae*, and *Sternon*,) and those do very difficultly luxate, not only because close and numerous for necessary Stabiliment and Defence to the vital Parts, but also because the more

We must know how the Bones are articulated.

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obscure the Motion, the harder and drier those Ligaments and Cartilages grow, which tie them together, rendering such Articulations stronger and more firm, than if made of one continued Bone.

Chiefly the ly concerns Luxations, is divided into *Arthrodia* and *Ginglymus*; the one for rotatory Motions of the Limbs, the other only Flexion and Extention: The former Sort, because the Motions are of great Compass, and equally to either Side, have a membranous Bag to link the Extremities for their truer playing in the Socket, and which supplies them with a Mucilage for facilitating it; and the latter have the Ligaments on the Sides, much stronger than before, or behind, that the Joints might not easily slip.

The first, *Arthrodia*. Instances of *Arthrodia*, are the *Os Femoris* and *Ischium*, *Humerus* and *Scapula*; where the single round Head of one Bone is received above into the Cavity of another.

The second, *Ginglymus*. The *Ginglymus* is of three Sorts: *First*, when the End of a Bone has two Protuberances, and one Cavity; and that with which it is articulated below, has two Cavities, and one Protuberance, to answer the Reception and Insertion of each other, as the *Humerus* and *Ulna*, *Os Femoris* and *Tibia*. A second and third Sort, (not so material to our present Purpose) are, of the *Ulna* and *Radius*, and the *Vertebra* amongst one another.

Causes.

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Causes. The common Causes of Luxation, are Falls and Blows in the superior, and violent Extensions by sudden Slips in the inferior Limbs; uncommon - is an Elapſe from ſome internal Cauſe, as when a Heap of Humours is thrown on the Joint, relaxing the Ligaments.

Causes of Luxation.

Signs. The Signs are a Loſs, or at leaſt, very imperfect Motion of the Joint; a Cavity whence the Head of the Bone has receded, and conſequently a Protuberance where it is lodged. The Limb will appear ſhorter, or longer, and the Pain attending it, more, or leſs, according to what Bone is diſlocated; and if it continue but ſome Hours unreduced, a Numbneſs; and if a long Time, an *Atrophia*.

Signs of Luxation.

Signs of Reduction muſt be the Reverse of theſe: The Limb will look, in all Reſpects, anſwering to its Fellow, and Pain abated.

Signs of Reduction.

Children and Women, by their tender and lax Conſtitutions, have them more eaſily reſtored than Men; young Men than old; and in theſe again, better when recent, than of any Time ſtanding; for in Age there is a natural Aridity and Stiffneſs in the Joints, increaſed by Delay in Reduction, which neceſſitates a more than ordinary Extention, and that diſtracts the Fibrils, conſtituting the Nerves and Tendons, not eaſily recovered, but oftentimes ending in Weakneſſes, ſometimes in Palfy, and Emaciation. The ſame may be ſaid of Frequency of

Prognosticks.

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Luxation in any Joint, tho' the Person be robust and youthful.

Intentions of Cure, are *Reduction* and *preventing Accidents*. To the former belongs *Extension* and *Reposition*; to the latter, *Deligation* and *Collocation*.

Extension,
how made.

Extension is absolutely necessary for restoring any Joint displaced, the Muscles serving to the Motions of it, not only being useless for the Time, but painful: And this Extension we should take Care be not made by Jaks, but smooth and strong, in Proportion to the Depth of the Cavity the Head of the Bone has slipped into, which depends on the Make of the Muscles, and the Edge or Spine of the receiving Bone, whether superficial or deep.

What is previous to the Reposition.

When you have the Limb at a proper Extension, and have afore considered which Way the Head of it has lapsed, whether *down, up, forward, or backward*, you are at that Instant to direct it the contrary Way, and it will fly in, facilitated by the Make of the Socket, which rounds inward (where the Joints have rotatory Motions) for the more close embracing the *Epiphysis*. If there appears any Difficulty in Reduction, either from the Time, (Hours or Days it has been out,) or the Depth it is to be extended from, it will be convenient before a Tryal with Extension to use oily soft Embrocations about the Joint, to relax the Parts for an easier Submission.

Dele

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Deligation and *Collocation* are to preserve the Joint restored, and prevent Accidents : The former can be explained only of Bandage, but is usually understood to comprehend the Applications, which should be of Medicines that can abate Pain, resist the Influx of Humours, and strengthen the Parts.

Such are Embrocations of *Ol. Rosar. Terebinth. a. p. a.*

Ung. Dialthe. Spt. Vini. Rect. a. p. a.

Or, *Ol. Cham. Hyperic. Misce q. v.*

And Emplaisters *E. Bolo. de Minio, ad Herniam*, or the *Cerat. commun.*

Rowling will be different according to the Part to be rowled, and may be found adapted in *M. Le Clerc.* We may only observe in general, that a thick Compress of Linnen is to be under the Rowler, on that Side the Bone fell out, there being more Suspicion of its tending that Way again.

Collocation is to be a Position contriv'd to the Ease of that Joint, in particular, that has been dislocated, and therefore varies according to where the Case is. In the inferior Limbs, a little Elevation, and a confined quiet Posture for a Fortnight or three Weeks: And if the superior Limbs, they should be so slung and sustained, as that no succumbing Weight, of the Parts below, incommode it. In all, the Bandages and Covering should be soft and smooth, a proper Restraint in Diet prescribed, Venesection,

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tion, sometimes Clysters and cooling Emulsions.

Bones joined for obscure Motion seldom luxate; but when they do, are most difficult of Recovery.

Bones as they are variously articulated, are more easy or difficult to put out, or return again.

ARib.

A Rib may slip in or outside. The inside Luxation is capable only of internal Prescription, Time and Patience, to relieve the Pain and Difficulty of Breathing, attending it: The outside indeed may be raised to its Place by an Elevation of the Arm, and pressing with the Fingers at the same Time; but the retaining it there, is not altogether so easy. So again

The Clavicle.

the *Clavicle* may be easily replaced, by putting some convex Body between the Shoulders, and pulling both back at the same Time; but then how long it will be retained, may be guessed from the incommodious Make, Insufficiency of Bandage, and Contraction of the Pectoral Muscle, which will ever be Impediments to preserving a true Reposition.

The Rotula.

The *Rotula* also may start outward, and by keeping the Leg strait, be thrust into its Place again; but as the Muscles *Rectus*, *Vastus Externus* and *Internus*, and the *Crureus*, with the tendinous Expansion of other Muscles, fasten it to the Appendix of the *Os Femoris*; their Contraction will very much elude any Skill to keep it so.

The

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The last I shall mention, of the Bones articulated for obscure Motion, are the *Vertebrae*, or *Ossa Spinae Dorsi*.

What is meant by a Luxation of them, I do not well apprehend: A Fracture of the Processes may be by Shot or Blow, and recoverable; but a Luxation must be ever, I think, of fatal Consequence, as it is the Effect of the greatest Strains, and makes a Compression on the Spinal-Marrow, whence the Nerves serving to Sense and Motion arise.

To form the justest Notion we can of these Hurts, we should meditate on the Construction of the *Vertebrae*; they are short, plain on the upper and lower Sides, convex before, and the Processes, by which their Juncture is made, are the hardest Parts of them; seven in Number, two lateral, one acute on the hind Part, and four oblique: Of these latter, the two ascending are receiv'd into small Dimples of the two descending Processes of each superior *Vertebrae* of the Neck and Back, and the Reverse in those of the Loins, so that the Articulation is a *Ginglymus*: Besides this, they are tied together by a strong Membrane forward, the whole Length of the Spine; behind, by the Tendons of the Muscles, and to one another by intervening Cartilages, *but not distinct*, which are thinnest backward, to yield to the Motions of the Body: These Processes together with the hinder or concave Part of the Body of the *Vertebrae*, form a Hole for the
Descent

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Descent of the Spinal-Marrow, lined with a Membrane.

The two first of the Neck At the Neck. (*Atlas* and *Epistropheus*) have this in particular, that the oblique Processes of the former receive the Tubercles of the Head, on which Articulation it moves backwards and forwards; The other has a long Process, called *Dentata*, ascending between the two oblique, and is inserted into a *Sinus*, in the Forepart of the great Hole in the *Atlas*.

On this Tooth-like Process, the Head and *Atlas* turns half round; but is hindered from going farther by the Ligament that ties it to the Head, and another that fastens it to each Side of the *Sinus*. A Luxation or Fracture of it, is what we understand by a Person's breaking his Neck, and must be mortal, tho' the Fracture not always immediately. I remember one *Scultborp*, in her Majesty's Ship *Lion*, 1712, being very drunk, fell down the Fore-scuttle, and fractured (it's probable) this Process, his Head fell like a dead Lump to either Side, and seemed so loose that his Face might have been turned almost behind: I made due Extention, and fixed the Situation a little rais'd with Pillows: He continued speechless, insensible, and with some Difficulty of Breathing; but lived twelve Hours after.

The Signs of this Luxation are reckoned Distortion, Blackness of the Face, and Difficulty of Breath; to which will succeed a Palsy of the upper Limbs, Convulsions, and cold Sweats. The Extention for Redress is laying the

Of Luxations, or Dislocations. 83

the Patient supine, and to fix your feet at the Shoulders, and Hands below the Ears.

The *Vertebrae* of the Back have the least Motion, because At the Back, their Cartilages are thin, their acute Processes long, and because the Ribs are fastened to them. The Processes of these *Vertebrae* may be fractured by a Shot grasing, (as I observed before,) or other external Stroke, and yet be of no considerable Consequence. But a Luxation, considering their close Conjunction, and the Ribs being fixed to them, seems impossible; or if they could, such a Compression of the Spinal-Marrow must be attended with a fatal Resolution of the Nerves, and Death. I have heard indeed of a transverse Process being fractured in stepping over a Kennel with a Burthen, and think it probable; because there are many Muscles arising, or inserting themselves into these Processes, that are the Strength of the Back; but if their Contraction can effect a Fracture, it will differ from the other Causes mentioned, and bring greater Lameness, because it must happen within-side their Insertion.

The common Hurt they are subject to, is the Distortion we call *Bunch-backed*, and proceeds from particular Weakness in the Ligaments and Muscles; for if these behind thro' any Cause relax, as is too frequent in Infancy, from the Carelessness of Nurses in rowling and continuing a Child in one Posture, why then their Antagonists remain perpetually contracted; whereby the oblique Processes, which join the *Vertebrae*, part from one another, and the Space fills with a viscous Substance, not
unlike

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unlike what we call *Callus* in any other Bone: And if the Misfortune begins from the Birth, before Ossification, then the *Vertebrae* themselves participate and enlarge the Deformity:

And at the Loins. The *Vertebrae* of the Loins, by the Distance of the acute Processes, and Thickness of the

Cartilages, bow most, and therefore most likely to recede at Manhood, by violent Strains in Labour or Exercise, and such are commonly call'd broken-backed, some of which we may have seen to go almost double, lame, and stiff for their Life-time.

This Misfortune, I do not apprehend proceeds from any Disconnection of the Bones; for then the Bent would be sudden, and immediate Death must ensue; but it is, as has been observed in Distortions of the Back, from the partial suffering of those Muscles that extend and erect the Body. The *Sacrolumbus*, *Longissimus Dorsi*, *Transversalis Dorsi*, *Interspinalis*, *Quadratus lumborum*, &c. These having their Tendons inserted into the transverse Processes, as heavy Burdens, or excessive Strains, shall weaken their Action, or possibly by Contraction, (for they are of prodigious Force,) fracture a Process; why then the Muscles that equilibrate these contract forcibly forward, and bow the Body much more than could be accomplished at the Back, not only on Account of their superior Force and Strength, but because the *Vertebrae* here have most Motion towards it, and no Ribs to sustain against their yielding.

These

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These Hurts are accompanied with extraordinary Pain and Inability of Motion, a Palsey or Numbness of the Arm, when it is the Back or Neck: The same in the inferior Limbs, when it is of the *Vertebra* of the Loins, sometimes also, of the *Sphincter Ani*, a Suppression of Urine, difficult Breathing, and the like.

Symptoms accompanying them.

External Applications are in common with those of the Joints: An anodyne Embrocation, corroborative Emplaisters, retained with Sash or Napkin round the Body; and, above all Things, Repose, to which a soft Bed will contribute; Venesection, proper Regimen, a quilted Pad to hide the Deformity; and, as the Party gains Strength, Steel Boddice. But because these Hurts commonly affect one or other of the Bowels, it is usual with them to prescribe Vulneraries, the Simples of *Sperma Ceti*, *Lap. Hibern.* *Cerevis.* *Prussia*, Caudle, &c.

Their general Remedy.

In spitting, or in pissing of Blood.

Rx. Conf. Rosar. Rub. ℥i. Coral. Rub. Gum. Arabic. a. 3j. Miv. Cydonior. q. s.

Or, Rx. Gum. Tragacanth. puriss. 3j. Solut. in Aq. Rosar. Rub. ℥j. F. Gelatina. M. cum Sacchar. Albiss. ℥i. Nucis Moschat. No. 1. Et Capiat Cochlear. semis, 8a. quaque Hora.

I proceed now to the Bones joined for manifest Motion, more subject to Luxation.

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Os Maxillæ inferior.

The lower
Mandible, how
joined.

THE Jaw-Bone hath two Processes at each Angle; the *Corona* arises broad, and ends in a Point, playing under the *Processus Zygomaticus*, where the Tendon of the *Crotaphite* Muscle is inserted into it.

The other called *Condylus*, (which makes the Joint,) is shorter, lower, and inserted into the *Sinus* of *Os Petrosus*; both *Sinus* and Process being cover'd with a Cartilage, and between them a third, to facilitate its side Motion in chewing. Another called *Ligamentum Annulare*, surrounds the Articulation; and the Muscles *Masseter*, *Temporal*, and *Pterygiodes*, help to keep it (by their Contraction) steady.

How com-
monly put
out.

Any Thing that over-stretcheth the Mouth, whether yawning, gaping or chewing, may put the *Condylus* out of its Socket, into the Cavity of the Cheek.

Signs, are the Jaw thrust forward, making the Teeth more prominent; or if the Dislocation be only of one Side, a Distortion like *Spasmus Cynicus*, he can neither swallow, speak, chew, or shut his Chops.

For its *Reposition*, place the Patient steady, put your Thumbs close to the further *Molars*, press down on those Teeth, extending and raising at the same Time the Chin with your Fingers, without-side, and it may be heard to snap in. Those who do not care for Ceremony, use a Slap of the Chops.

Os

Of *Humeri*.

THE Shoulder is capable of all Motions; and that they might be easy and extensive for the Necessities of Labour and Exercise, the Head of the *Humerus* is larger than the Cavity of the *Scapula* wherein it is received, (which is likewise most of a ligamentous Substance;) to give less Hindrance to the Compass of them; but it is for these Reasons, also, more subject to Luxation than any other Joint, slight Accidents of Blows or Falls, frequently occasioning it.

The Shoulder how joined.

It is almost ever dislocated downwards, rarely forwards, very rarely backward, or upward; the two latter Ways, I believe, have been added rather from the Possibility of the Thing, than Experience and Fact; for it is not easy to conceive what Sort of Violence it must be, which can effect them: The Breast takes up the Motion of the Arm, so effectually forwards, that how great or sudden soever the Blow is, the Joint will still yield, and cannot be stretched to a Luxation; and upwards, the Position of the Arm (very unusual in Falls) must be parallel with the Side; and the Blow take the Tip of the Elbow; and even then the Spine or Cervix of the *Scapula* must be fractured, to compleat a Luxation.

Two Ways of Dislocation.

Signs

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How to know
a Dislocation
of it.

Signs of Luxation here, are a Cavity in the upper or back Part of the Joint, and the Head of the *Humerus* felt hard and protuberant in the *Axilla*, or forward under the pectoral Muscle; the Elbow (as is the Prolapse) hangs from the Side outward, or a little backward, not to be brought close without Pain; the Arm seems longer; and as the Motion of the Joint is lost, so it plainly follows, a Patient can reach no higher than that Extent which is between the Elbow and Tips of the Fingers will allow, (*i. e.* only to the Mouth, if the Head be kept upright.)

Signs of Reduction.

The Reverse of these will appear on *Reduction*; the Joint and Arm recovers a Similitude with the sound one, Pain is abated, and what we may add, as a surer Sign than all, is the snapping Noise that will be heard at its returning into the Socket.

Intentions of Cure.

Intentions of Cure are properly but two, as aforementioned. *Extention* and *Contra-Extention*, answers the first, (*i. e.* *Reduction*;) and *Deligation* and *Collocation* include the Means of our second, (*that is, preserving it so, and preventing Accidents.*)

For *Extention*, there are the Hands, the Heel, a Ladder, an Ambee, and Crutch in use.

When attempted by the Heel, the Posture is incommodious for *Reduction*, because the Patient is laid on his Back; however, in order to it, a Compress or Linnen-Ball must be fitted;

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fitted to the Hollow of the Arm-Pit, for the easier fitting of a Girt, which is to come over that and the Shoulder, for *Contra-Extension*; while an Assistant below fixes his Hands on the Cubit, and his Heel in the *Axilla*; where, by the Way, it may be noted, that the Elbow-Joint interposing, abates the Force of *Extension*.

The next Method, is over another's Shoulder, or rather the round Step of a Ladder. Here the Compress and Ball being fitted to the *Axilla*, and a sufficient Strength placed before at the Arm, the Weight of the Body (tripped off the Step) is to be the *Contra-Extension*, a more dangerous Expedient than any; for should the Weight, by such a sudden Jirk, bring but a small Part of the *Os Humeri* over the Step of the Ladder, there would be very great Hazard of fracturing it; at least, it is a Violence that will render more dangerous the attendant Symptoms.

The *Ambree* is an Instrument in common Use, and needs no Description, fixes under the Arm, the Length of it, and extends to what Degree you please.

The Crutch is the newest Invention; skews into the Floor, and in the Middle of the Head, a wooden Ball rises to thrust under the Arm, which fastened by proper Ligatures, there is a Jack and Pullies to make Extension by.

But the Hands, in my Opinion, are preferable to all these; and have been sufficient with me, for reducing a Shoulder, even when

The Ladder.

The best Way is by the Hands only.

the

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the Head of the Bone, has been *prolapsed three Weeks*. Instruments, I think, do not equally extend the Bone with the Muscles; they tear and distend their Fibres, when the Extention (where it ought to be) is what may be compassed with the Hands more commodiously, because you perceive the Head of the Bone moving, and can more seasonably help to raise it up.

The Method is to bring a Napkin round the Patient's Body, to sit broad on the Hurt-side, the upper Edge of it to come close to the *Axilla*, and on the opposite Part to be tied very fast, for some Assistant to make the Contra-Extention by. He that extends forward, should be strong, and have his Hands flowered, for the more firm holding.

If you doubt of Success in the first Tryal, (as may be in robust Men, or your Assistant cramp'd,) have ready another; do not easily yield to procrastinate.

The Patient is seated on a low Stool, fixed so that Assistants can come round, without incommoding each other; the Surgeon overlooking, claps his Thumbs forcibly on the *Cervix* of the *Scapula*, and his Fingers underneath in the *Axilla*, without any Linnen or Compress between to dull the Sense of Feeling, when the Head of the prolapsed Bone is moving.

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Thus ready, Extention and Contra-Extention should be begun together, not by Jirks, but smooth, steady, and strong; and

Extention, and
Contra-Extention.

when the Head of the *Humerus* is found moving, the Surgeon must endeavour, with all the Strength he has in his Fingers, to assist its Reposition, ordering him that extends, to favour this Part, by moving the Elbow downward towards the Patient's Side, when he is at the full Stretch of it. We may note, that very strong Extention is chiefly of Use in robust Bodies, and where the Bone has been long slipped, (least the *Cupula* fracture,) for in Children and young moist Habits, less will do; we need only make an ordinary Extention at the Arm, and bow contrary to the Way the Bone prolapsed, the Surgeon's Hands (at the same Time) grasping the whole Joint, will be a sufficient Contra-Extention.

Deligation and *Collocation* comprehend Dressing, Bandage, and Situation. The Dressing,

Deligation, and
Collocation.

where the Patient is young, and of good Constitution, need only be a Compress large enough to enfold the Joint, dipped in *Oxycrate*, or *Acetum cum Albumine Ovorum*; and if older, or an ill *cachymious* Habit to deal with, the following Embrocation and Emplaster will better resist Pain and Influx of Humours.

Rx Ol. Lillior. Hyperic. a. p. a. M.

Rx Empl. Diaplm. de Minio. a. 3℥. Bol. Armen. 3ij. Oleum dulce q. s. F. Empl. extendatur super Alutam.

Or

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Or an *Empl. E. Bolo*, or the *Cerat. commun.* adding, if Occasion, Venesection to the contrary Arm.

The Bandage, called *Spica*, described in *Mon. Le Clerc*, will be always best for the Shoulder; and next to that, the *Star*, (this makes only Crosses behind, the other before and behind;) either is usually dipped in *Oxyerate*, or Red Wine; and before using, the Hollow of both Arm-Pits, filled with Linnen Compresses, or Tow, to adapt the Bandage, and prevent galling, and keep the Circumrotations tort; because, what with the drying of the Rowlers, and Motion of the Breast in breathing, they soon slacken.

The Situation of the Limb
A proper Site. should be in a large Napkin, thus: Bring one Edge of it close under the hurt Joint; carry one Part behind, the other forward, and tie fast on the opposite Side of the Neck; the inferior Selvedge of the Napkin bring up, having inclosed the Cubit, and pin at a suitable Elevation.

A Slip of the Tendon imitates a Dislocation.

N. B. There is one of the Tendons of the *Biceps*, which passes through a little Notch or Excavation of this superior Part of the *Humerus*, that sometimes in quick Jirks of the Arm, (Slinging, or Bat-playing,) slips its Place, and imitates in Pain and Imbecility a Dislocation: This is easily distinguished by the Protuberance and Cavity being wanted, and requires no Extention, only an easy Twisting, or Variety of Motion to the Arm, till it replaces.

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Of Femoris.

THIS Joint, made by the Insertion of the Head, or *Epiphysis* of the Thigh Bone into the *Acetabulum Coxendicis* is secured, besides the Depth of the *Enarthrosis*, by a ligamentous Substance round the Brim of the *Acetabulum*, that makes the Diameter less there, than in the Socket, binding in the Head of the Bone; which, if we consider, together with that Security the *Ligamentum teres longum* and the Muscles add, it will be almost impossible to allow its Dislocation, but that the Accidents taken for it are generally Fractures; a Mistake I have more than once seen.

The Hip-Joint described.

I must acknowledge, that in tender Infant-Years, where Children are weak and ricketty, and the *Epiphysis* as not yet united, it may be subject to an inward, outward, forward, or backward, either Distortion, or Dislocation, as is evident in some short Limbs that have gone the whole Life-Time unreduced. But in Adults, the Possibility seems only inwards, and that first, because the *Ligamentum teres*, which ties in the Head of the Bone, arises not from the Middle of the Bottom of the Socket, nor is inserted exactly in the Middle of the Head of the Thigh Bone, but on the Side next the Groin, most favourable for admitting it. Secondly, The *Ligamentum longum*, arising from the Neck of the Bone, and being inserted in the nearest Process of the *Coxendix*, suffers not the Stretch
this

The Thigh Bone slips only inwards, unless by Congestion.

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this Way. *Thirdly*, The Ligamentous Substance above mentioned is not so deep inward, as at any other Part of the Brim. And, *Lastly*, The Perforation of the *Os Pubis* is convenient for the Reception of the Head of the Thigh Bone: Yet all these concurring with any Violence, the Bone sooner fractures than dislocates; for as it must be perfect, (or the Head of the Bone would return back again presently) so that cannot well be, without a Rupture of the *Ligamentum teres*, an Accident scarce allowable; but if it can happen, exposes to every sort of Luxation, as well as the inward.

Signs of an inward Luxation, are a Tumor and Protuberance on the Hole of the *Os Pubis*, and Cavity on the opposite Side; the Leg appears longer than the other, the Knee and Foot turned outward, and the Motions the Joint serves to very imperfect, or lost. In the exterior Prolapse, the Leg appears shorter, the Leg and Foot turn'd inward, and the Heel to the Outside, requiring a stronger Extension to reduce, as being from a deeper Cavity, and unbending the Contraction of some of the strongest Muscles of the Body.

As the Violence which luxates the Hip, must prodigiously exceed that of any other, and that the *Ligamentum teres* is broke, so the Pain and Influx of Humours will be proportionably aggested; and Inflammation, Apostemation, and perpetual Lameness, a more common Consequence of it.

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In the inward Luxation, the Muscles are already on the Stretch, and therefore require no great Extention; there seems only to be wanting some strong Person, between whose Legs the Patient may sit, and with a strong Grasp about his Body, hinder his receding, or giving way, which is the Contra-Extention; or with a strong Towel up the Twist, let two Assistants do it, while the Surgeon with both Hands above the Knee, extends forward, (an Assistant bearing the Foot up,) and at the same Time carries it towards the sound Thigh, and upwards.— For reducing the outward Luxation, more is wanting: A Pin should be fixed, says Mr. *Wise-man*, on a Table, to come down between the Thighs, the Patient on his Belly; a Strap is to pass up the Crutch, with a Compress under, to defend from any Uneasiness; and forward (if the Hands are not sufficient) we may extend also with Straps, or use the Tackle and Pullies, thrusting the Thigh backward and outward at the same Time.

After Reduction, remains The Dressing, Dressing and Situation; and Situation. and herein I should think a Compress dipped in *Oxyerate*, or Red Wine, large enough to infold the whole Joint, and crossing upon the Hip, would be better than Emplaisters, which obstruct the Perspiration of the Part, and by that Means raise a Ferment in the Humours, more rationally supposed to be aggregated; where the Hurt and Extention to restore it have been both so very great. The Rowler
F should

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should be long and double, and like the Compress, cross over the affected Hip, and so continue with Crosses and Edgings till finished.

A proper Situation is resting the Hip on a soft Pillow, with the Knee and Foot a little raised, and continued for three Weeks in the quietest and easiest Position. Venesection, Clysters, and Dieting, are to contribute likewise their Share in preventing Fever, and other Disturbances.

Mr. Turner mentions two or three Cases wherein he succeeded without the Help of any Instrument: *The Ostler flapped in very loudly; was perfectly easy, and got up at a Fortnight's End; in five Weeks could vault nimbly; nor ever after complained of any Weakness in the Joint.*

Os Cubiti.

Luxation of
the Elbow.

THIS Juncture is a *Ginglymus*. The *Humerus* ends with a double Protuberance, which necessarily makes a Channel between them; on each Side of which there is also a little semicircular Rising. On the Foreside of these Protuberances, there is a small, and on the Backside a large *Sinus*. The *Ulna*, which is the Inside Bone, and makes the Joint, has a Cavity suitable to the inner Protuberance of the lower End of the *Humerus*; and it has two Processes likewise shooting from this Cavity, one before, and one behind: The foremost is small

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small and short, running into the *Sinus*, on the Fore-side of the Protuberances of the *Humerus* on Flexion; and the hindmost called *Olecranon*, (bigger and longer than the former,) runs into the hind *Sinus* on Extention, staying the Arm at a strait Line. The *Radius* has here a broad Head, Part of whose Circumference is received into a small lateral *Sinus* of the *Ulna*, bound in by a broad Ligament; (and by Virtue of this, the Actions of Pronation and Supination are performed.) The Top of this broad Head has an Excavation for receiving the outer Protuberance of the *Humerus*, and secured to it by the circular Ligament involving the Joint, and by several Muscles.

It is very difficult to conceive how a perfect Luxation of this Semiluxation: Joint can happen, semiluxated, or distorted: It may be four Ways; inward, outward, and sideways; though if we consider how it is secured from the latter by the Make, and strong Ligaments on its Sides, and how improbable it is for any Flexion to thrust it out backward, we may be apt to imagine it is more frequently, than truly represented so, to increase the Timidity of a Patient, and recommend the Skill of the Artist.

The most likely Way of Luxation, is inwards; and yet high Falls, wherein the Fore-Arm catches or strikes on any hard Body, rather makes a Fracture, than any Distortion at the Joint, unless, in such Falls, the Person endeavours to save himself with the Palm of his Hand; for then the Strain lies entirely at the Elbow, (the Wrist yielding, and the Pres-

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sure along the Cubit being *secundum Longitudinem*,) so that if of Necessity something must give way, it will probably be here; but then it cannot recede far without fracturing the *Olecranon*, (the posterior Process of the *Ulna*;) a deplorable Case, and must produce incurable Lameness the very Time it takes up in Recovery, rendering the Joint stiff and immoveable. I have known the Elbow kept so long at the Breast for a Compound Fracture above, that it could never be stretched out again. But when such an Accident is apprehended, the Curve is more commodious to an Invalid, than the straight Line.

Signs. Signs of a distorted Elbow, are a Protuberance on which Side soever the Head of the Bone thrusts out, a Cavity whence it has receded, and an uncommon Pain from a Distraction of the Tendons, the Flexors, and Extensors of the Hands and Fingers taking their Origin from the inner and outer Protuberances of the lower End of the *Os Humeri*.

Reduction. To reduce, is to extend and force the Head of the Bone contrary to the Way it prolapsed.

The Dressing and Position should be contrived emollient and anodyne. Embrocate with *Ol. Hyper. Rosar. a. p. æ.* and dip a double Flannel (snipped from each End towards the Middle) into the same Mixture warm, and apply: It is, I conceive, better than a Plaster, as being more soft and anodyne, and com- pliable to the Shape and Position we are to put it in. The Rowler should be single: Begin, with

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with one Turn on the lower End of the *Os Humeri*, slope it down on the Bending of the Arm, and make a Turn on the upper End of the Cubit, re-ascending on the Bending of the Arm, so as to make a Cross there; continue so to do with Edgings, till the Whole be covered, (except the Tip of the Elbow) and finish at the upper Part of the Arm. You must give the Cubit a little Flexure before Rowling; and the Elbow not being covered, will yield enough to sling at a proper Elevation.

Os Tibia:

THIS Joint is a *Ginglymus*. Luxation of
the Knee.
also, (the strongest of Articulations.) The lower End of the *Os Femoris* has a double Protuberance, divided by a Cavity, and the *Tibia*, or *Focile majus* (on which the Juncture is made) has a double *Sinus* at its upper End, with a Production between for the mutual Reception and Insertion of one-another. The *Cartilago lunata* runs between the Extremities of the two Bones, and facilitates a Side Motion. The *Fibula* receives at this End the external Knob of the *Tibia*, but comes not up to the Knee, to make any Part of the Joint.

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Patella, a great Strength to the Joint.

The *Patella* tied down on its Forepart by Muscles passing to, and beyond it, and by the Tendons of the Extensors of the Leg, add a great Strength to the Joint, particularly on going any Descents; and behind the Hamstrings, (*Tendons of the Flexors.*) All which together, renders it (unless where great Enervations and Discontraction of the Tendons has preceded) difficult of Luxation sideways or backwards; but forwards, seems impossible, not only on account of the Pan, but because *Genuflexion* can never be carried far enough.

Signs of Subluxation and Reduction.

Signs, are what have been remarked in common with others, unless that the Tumor and Cavity may be more apparent: And Reduction is extending and moving the Head of the Bone, contrary to the Way it went out. Suppose it were backwards, you are to have an Assistant for the *Contra-Extension* above the Knee, and your self with one Hand on the Calf, and the other above the Ankle, are to extend forwards, giving it at the same Time, a quick Flexion towards the Buttock, and it will knap in: A certain concomitant Sign will also be the Cavity that was under the Pan, being filled up again. The Dressing should be an Embrocation of *Ol. Rosar. Hyper. M.* a corroborative Emplaster on Kid Leather, a Compress in the Ham, a Flannel over that, and then a double Rowler. Begin with the Rowler just above the Knee, descend with a Cross under the Ham, bring them up

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up below the *Rotula*, and make a Cross on the Leg. Continue thus to do with Edgings, till the Knee is covered, and Rowler finished. The Compress included here, not only guards against the Tendency of a Prolapse, but defends the Tendons behind from Cold and Uneasiness, which too aptly contract them in these, as also in Fractures, that necessitate a long and inactive Confinement. When such Contraction does happen, I must recommend, besides warm emollient Embrocations and Fomenting, a Working of the Limb backwards and forwards on the Joint: These Chords have some Resemblance to those without us, and soften, and unbend with Warmth, Moisture and Motion. I knew such a Contraction of the Flexors, after a long Confinement for a Fracture of the Leg, that when Ointments and Fomentations had been used to no Purpose, unbended and straitened after about a quarter of an Hour's such Exercise with the Limb.

Ossa Carpi.

THE *Radius* (on which the Articulation of the Wrist is made) is largest at the lower End, and has two *Sinus's* for receiving the first Rank of the Bones of the Wrist, (the fourth Bone of this Rank lays upon the third, and seems easiest of receding from its Station.) The second Rank, lay even, answering to those

The Wrist described.

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of the *Metacarpus*, which at this End have each a *Sinus* to receive them. The *Ulna* is small here, received into a like *Sinus* of the *Radius*, and makes also a short Process even with the Outside of the Little-Finger. This Process gives Rise to Ligaments that tie it to the Bones of the Wrist, and serves to keep them in their Place. *Lastly*, they are strongly tied to one another by Ligaments from the *Radius*, and by the annulary one.

From this Description of the Wrist may be inferr'd, *First*, That being composed of several single Bones, they may recede from one another; and that chiefly at joining the two Ranks, or in that fourth Bone of the first Rank, not seemingly so well secured as its Fellows. *Secondly*, The first Rank may slip, or distort from the *Radius*, or the second Rank out of the *Sinus's* of the *Metacarpus*, either according to the partial Weakness, and as the Strain or Pressure bears on a particular Point, or the whole Joint. *Thirdly*, From the Manner of their joining, and the Motions of the Wrist, we may conclude, any other Way of Dislocation, than forward or backward improbable; excepting that fourth Bone of the first Rank, which I have seen continue prominent nigh the Process of the *Ulna* with little Trouble.

As the Signs of Distortion are a Prominency one Way, and a proportionable Vacuity on the other, so consequently Reduction is the Recovery of its Shape; and though done easily by Extensions (their Edges holding still a Part with

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with their Fellows,) yet is it subject in its Consequence to great Pain and Tumor.

Pain is a necessary Result from the greater Sensibility of a Number of Tendons here; but then the Tumor is rather an Inflation. Now according to the Mechanical Method of accounting for the Operation of Muscles, Inflation should be in the Bodies of them, and none in the Tendons; yet so it comes to pass, that fleshy muscular Joints have most Danger of inflaming and apostemating from an Accumulation of Blood; and tendinous Joints, such as the Wrist, more evidently to a Rarefaction of Blood and Spirits; such are these large soft inflated Tumors, the constant Attendant of Sprains and Distortions.

The Doctrine I would draw from this, is only in respect to Rowling. That in fleshy Articulations, the Tumor, when inflamed, being plainly an Accumulation of Blood, and no supposed Expansion or Elasticity of Air, strict Bandage must obstruct the Circulation, and increase the Accident. On the contrary, in inflated Tumors (as all these may be reckon'd, which carry the natural Colour of the Cuticle in Sprains) straight Bandage is most advantageously used. We need not neglect Topicks afore-prescribed; but the Cold Bath, Rest, and this, are the most effectual Means of Recovery.

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Ossa Malleoli.

The Make of the Ankle Joint. **T**HE Ankle Joint is made between the two *Focis* and the first Bone of the *Tarsus* (called *Astragalus*) by a *Ginghyms*; for the *Tibia* at this End has a Cavity divided by a small Protuberance, and the convex Head of the *Astragalus* (inserted into this Cavity) is divided by a *Sinus*, for the Reception of that Promberrance; so that the *Fibula* makes only a Part of the Joint, as it descends in a large Process on the Outside of the *Astragalus*, forming the outward, as the Process of the *Tibia* does the inward Ankle.

There are six Bones more go to constitute the *Tarsus*: The *Os Calcis* is the largest, tied by a *Ginghyms* to the Underside of the *Os Astragali*, or *Tali*, which on the hinder Part of its Underside has a *Sinus*, and on the Forepart of the same Underside a Protuberance for receiving, and being received by an answerable Convexity and *Sinus*, in the upper Part of the *Os Calcis*; and from this Juncture is formed a Cavity, containing an Oily Substance for lubricating the Joint. In the hinder Protuberance of it, is inserted the *Tendo Achilleis*, and before it has a Cavity, receiving Part of the *Os Cubiforme*.

The *Os Naviculare* is situated before the *Os Tali*, receiving its convex Head; and forward it is divided into three Heads itself, and inserted into the *Sinus's* of the *Ossa Cuneiformia*, or Wedge-

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Wedge-like Bones: These again, are joined to the three inner Bones of the *Metatarsus*: They are in Rank, and the *Os Cubiforme* with them; the latter joined in like manner to the two outer Bones of the *Metatarsus* before, and the *Os Calcis* behind.

The Conformation of this Joint considered, how fast bound with Membranes, Ligaments, and Tendons, makes it very difficult of Luxation; such a one, particularly, as that any two Bones will ride on one another. If the *Os Tali* were entirely to slip out of the Cavity of the *Tibia*, how miserable must be the Distortion, and how torn the Ligaments? Nor could it well be, without displacing or disturbing at least its Juncture with the *Os Calcis*, or *Naviculare*; and that, perhaps, might extend further to the Bones they are contiguous to.

Again, the *Os Calcis*, *Naviculare*, and *Ossa Cuneiformia*, seem not capable of being dis-jointed at one End, without making a Separation at the same Time from the Bone they are contiguous with, at the other: As for Instance, should the *Os Calcis* depart from the *Astragalus*, it must move from the *Cubiforme*. If the *Naviculare* recede from the *Astragalus*, there must likewise be some Recession at its Juncture with the *Cuneiformia*. And they again, by any Accident, suffering a Distortion from the *Naviculare*, must, in some Measure, bear the Effect to the Bones of the *Metatarsus*, to which they are joined; and this because they are short, and so closely linked and united. Whence the Ankle, as it approaches towards a perfect Luxation, suffers insupportable Pain, a
long

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long and tedious Weakness, and sometimes irrecoverable Lameness.

Dislocations of it imperfect. That the Dislocation is imperfect here, may be imagined from the slight Accidents commonly said to induce it, such as slipping on an uneven Surface, sudden Stumbles and Falls; and this Recession of the *Os Tali* from the *Foveilla*, or the *Os Calcis* from that (both *Ginglymoid* Junctures) may be four Ways; *Outward, Inward, Backward, and Forward.*

Signs. To judge of it, we must attend to the Nature of the Hurt, how received, &c. The Pain, Tumor, and Deformity of the Joint: If inward, the Foot will be found turned outward, in Proportion to the Distortion; and if outward, the Foot turned inward, &c. But as these Signs are equally the Concomitants of Sprains, and that it is not easy to perceive any small Distortion of the Bone through a large Tumor, or a peculiar Conformity; I say, in regard to this, it is not impolitick to recommend Extention at all Times: A Patient confines himself with more Satisfaction; and keeps him off from Pretenders, who never fail on such Omission, to represent the Case in bad Colours, the better to recommend themselves.

Extentions, how done. Extention should be made with one Hand on the *Metacarpus*, the other under the Heel, while an Assistant holds the Leg the same Time: Having collected from the foregoing Signs, how the Head of the *Astragalus* lies distorted, wring the Foot the contrary Way; or when the Recession

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cession is small, or but suspected, press gently with your Fingers about the Joint, (when at its Extention,) to restore the Deformity.

The Cure consists in the present and continued Use of the cold Bath, an Embrocation of *Ol. Rosar. Hyper. p. e.* a Corroborative *Empl. ex Minio & Diapalm.* a Rowler, and, what is the properest Ingredient towards Amendment, resting on a soft Pillow. As it recovers, recommend a sort of half Boot, coming up as a Part of the Shoe to lace on, and steady the Joint.

Os Pollicis & Ossa Digitorum.

THE Thumb is joined to the Wrist, as the Bones of the *Metacarpus* are; that having a *Sinus* at its upper End for the Reception of the other; and the second Bone of the Thumb is joined to the first, as the first (or longest) Phalanx of the Finger, is to the Bone of the *Metacarpus*, i. e. the upper End has a *Sinus* for the Reception of the round Extremity of the other; therefore may be dislocated any Way, and has these Signs.

Forward the Flexors will be stretched, backward the Extensors, and the Disparity is easily seen and felt.

Extention reduces them; and they require (as greater Dislocations do) an Embrocation

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tion and Emplaister, suitable Rowling and Repose.

Sprains.

Sprains have a Similitude with Dislocations.

IN Luxations the Joints are always sprained, whence the Symptoms of Pain, Tumor, &c. and oftentimes without it.

According to the Violence of the Fall or Hurt, that occasioned the Sprain, the Tendons become more or less distended, and that latitudinally or longitudinally; which, allowing for the Age of the Patient, is the only Cause why the Weakness or Lameness of that Joint, should be of a short, or a long Continuance; because, as Nature has given to all Parts of the Body a Peculiarity of Sense, Texture, and Figure, which will best conduce to the Use or Action it's designed for; and again, that the Parts are more or less solid, as may answer best those Ends and Necessities; so it necessarily comes to pass, that the more sensible any Part is, on which a Hurt happens, the more acute and sharp must be the Pain; and the more solid it is, the longer Time it must take for Restoration. The Tendons are Parts of the acutest Sense, and of a mean Solidity, having a peculiar Texture on which the Perfection of Action depends: If they grow dry, and approach towards Rigidity, by Defect of Nourishment and Infirmities of Age, we find they proportionably lose of their Sense, and the Limb or Limbs become

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become imperfect and maimed in their Motions: So on the other Side, if Strains distend them from their natural Make and Manner of Compaction, they will, as I observed before, on Account of their Solidity, require a longer Time for Recovery; which would not sometimes be protracted for so many Months, (often a longer Time than a fractured Bone is uniting,) if the Quickness of their Sense did not stimulate an Afflux of the nervous Juice and Humours to the Part which promotes those additional Accidents that obstruct it; nor are they at any Time irrecoverable, but from a Detention and Fixing of such Matter as should have been excren'd, (if possible,) and by continuing, impedes the Access of Spirits, dulls the Sense, and consequently spoils the Sense of the Part.

If a Strain be therefore as thus described, why then, at its first being received, we should endeavour to restore the Nerves and Tendons to a due Tensiry again; and this, in my Opinion, can by nothing be more effectually done, than by the immediate Use of the Cold Bath, a Means that will restore them to their proper Springiness and Stiffness, (if continued,) and recover Strength sooner than all other, in a much longer Time, could do.

Corroboratives, whether distinguished by Emplaisters, Rowling, or Bracing, may bring up the Rear and have their Use.



C H A P. IV.

Of AMPUTATIONS and WOUNDS.

What is first to be considered in Amputations.

IN this Operation, the first Thing we ought to have in Intention, is the stopping of the Blood, that so when Excision is made of a Limb, we may not be at a Loss for the *Apparatus*, nor a Presence of Mind to apply it: Too copious a Flux may not only be of immediate Hazard, but by dispiriting a Patient, and abating of those Supplies every Part should receive, subject the Stump hereafter to the worst of Symptoms, *viz.* Pain, Indigestion, and Mortification.

It is therefore a necessary Interruption to adjust now the properest and safest Way of stopping the *Hæmorrhage*; that at the Operation we may not seem plunged into Difficulties; a Thing terrifying to a Patient, and a great Hindrance to the Success of it.

There are three Methods in Practice: The *first* is by Medicines Astringent or Styptick. The *second* by Cauteries, actual or potential.

And the *third*, by a Deligation of the Artery. First, *Astringents*. In this Class we may reckon all Earths, *Terra Sigillat. Lemnia, Pul. Astringens, Bolus Vera, Sang. Dracon.* All Vinegars and rough Wines, and

First is by Astringents.

Flor. Balauſt.

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and to speak generally, all such Things as are dry, and have an Asperity of Taste: Also Medicines of a gummy, sticky, or glutinous Nature, such as Whites of Eggs, *Hare's Hair*, *Aloes*, *Thus*, *Myrrh*, *Terebinth* of all Kinds. The Manner of using the Powders, is mixing them to a Consistence with Oxycrate and Whites of Eggs, and then spreading them thick on Pledgets of Tow.

Astringents when they are most successfully used, are not from How they act any irresistible Stop their Stip-
ticity can make to the rapid Current of the Blood through the Arteries, which is absurd, but from the Circumstances of their Application; for when thick Pledgets are used, one compressing another, cross Cloaths and Rollers, on them again, straightly bound on, the Stump must needs be as secure from a Flux, as if a strong Compression were made with the Thumb immediately on the Vessel itself.

Ol. Terebinth. is of general Estimation among Astringents; *Ol. Tereb. the best, according to Mr. Young.*
Mr. Young celebrates it extraordinarily in several Experiments he made. In the present Case he

explains its Operation in these Words; * " That
" it restrains an Hæmorrhage by contracting
" the Orifice, and begetting a firm Coagulation of the Blood; which Coagulum, he
" thinks, probable, heals the Orifice of the
" bleeding Vessel, either by uniting its Coat,
" *per Symphisin*, or by Concarnation, i. e. be-
" getting some intermediate Substance; which
" it will nimbly do." And

* *Young's Currus Triumphalis à Terebintho.* p. 46, 47.

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And I must confess it an excellent Medicine in Amputations, not only in its constringing, as effectually as any other of the Class, but principally from the admirable Property it has of restraining that frequent and troublesome Attendant a *Synovia*. The Juices effusing and maturing on the Stump, being, by a skilful Management thereof, justly proportioned (through the whole Cure) from the Extremes of Indigestion and Putrefaction.

But whoever hopes more from this, or any other Astringent, that is, shall expect their bare Application sufficient to resist so impetuous a Motion as the Blood flows with, through the crural or axillary Artery, builds on a very sandy Foundation, and will on Tryal find himself deceived.

Besides, Astringents used alone have these further Inconveniences. The first and greatest is, our being necessitated to make a very strict Bandage, and that especially with such whose Crasis of Blood is hot, thin, and serous; the Consequence of which is present excessive Pain, and often, in the Sequel, Mortification.

A second is, that there being confessedly only a *Coagulum*, on the Orifice of the Vessel, by Astringents, it is very much to be feared the first Dressings (clogged and cemented by Heat and

* A Word invented by *Paracelsus*, to signify that particular white glewy Matter about the Joints, Tendons, and Ligaments.

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and the extravasate Blood) cannot be removed without occasioning a fresh Flux; or should that be avoided by a cautious handling and undressing the Stump, yet there still remains Danger from the Pulsation of the Artery, the Obstacle it has to break through being weak, when the other Fences of Rowlers and Compresses are removed.

And therefore, thirdly, for Security, we are obliged to make a cross Sitch, to let the first Dressing abide longer on, and perhaps to fasten on the Turniket at undressing; all which contributes to give unnecessary and greater Pain, to diminish the natural Heat of the Part, and to occasion Faintness and Indigestion.

Secondly, by *Cauteries, potential or actual*. These secure from bleeding by the *Eschar*, they make on the Orifices of the Vessels.

A second Method is Caustery.

The *potential Cauteries* are less eligible, as their Effects are more tragical; they know and corrode on the Ends of the Nerves and Tendons, and so insinuate and spread their

Potential Cauteries.

Malignity, that you never fail of extreme Pain from them, a large *Synovia*, and too often Fevers, Convulsions and Death, as may be easily concluded from the Tribe of them. *Aq. Fortis. Ol. Vitriol. Mer. Sublimat. corrosiv. Arsenic. Chalcantb. Vitriol. r. &c.*

If ever you should be engaged to their Use, the *Pot. Vitriol. Roman.* is the readiest and best: A thick Pledget or Button is first to be pressed out of warm *Ol. Terebinth.* and when sprinkled or dipped in this Powder, applied to the Mouth of the Artery.

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The actual
Cautery.

The *actual Cautery* has heretofore been of common Use in these Operations: *Fabric. ab Aquannd.* says, The antient Way was making Circumcision on the dead Part, within a Finger's Breadth of the live, with Cautery burning up all the remaining Mortification; others used a hot Knife: But modern Practice explodes it, for a Deligation of the Vessels which carries less Terror and Anguish. Tho' Mr. *Wiseman*, the Oracle of *English Surgery*, preferred this Method not only here, but in common Wounds of the Veins and Arteries, giving these Reasons, that it *secures the bleeding Arteries in a Moment, fortifies the Part against future Putrefactions, and the Stump requires Bandage less strict.* Tutius enim est eam ignito ferro constringere. *Botallus.* And in such Respects it really claims the Preference, both of Astringents and Deligation; because although applied to the Orifice of one Vessel, it influences those of the whole Stump, not only giving a violent Contraction to the Coats of the Artery touched, but the Membranes nigh the Contract; so that the Vessels passing through them, have their Diameters lessened, if not closed.

And this cannot be said to be done in Deligation, since there we only tie the single and larger Branch of an Artery, leaving the lesser to common Applications, from which may sometimes happen Danger, and more particularly when the Blood is thin and volatile. An actual Cautery is here likewise a Preservative against Mortification. First, by its *Eschar*; and

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and, secondly, by invalidating the Necessity of straight Bandage.

To use the Cautery aright, there should be a flat Iron-Plate How used. to preserve the adjacent Parts, with a Hole thro' the Middle, made fit to receive the End of the heated Button on the Artery; and in applying it, we are to observe, that if not hot enough, it makes no *Eschar*, giving only unnecessary Anguish to the Patient: And on the other Side, if too hot, it then makes an *Eschar* indeed, but separates and loosens it at the same Time, the Security intended being either Way equally eluded. But this is an Inconvenience that may be obviated by a quick or slow Application, as the Surgeon shall judge to the Degree of Heat in his Bottom.

Thirdly, by a *Deligation of the Artery*: This has justly the Pre-eminence in Practice, neither carrying the Dread a Cautery does, nor the Insecurity mentioned of Astringents: It can only be unsafe, when by a mistaken Method the Knot is slipped over the Forceps, (instead of piercing the circumjacent Flesh,) which sort of Knot, indeed, the Pulsation of the Artery soon throws off.

The third Method by Delegation of the Artery.

The proper and secure Way of Delegation, is thus: First, a loosening of the *Turniket* being made, and the Artery discovered by its *Impetus*, you immediately lay hold of it with a Spring-Forceps; and having the

Delegation, how perform'd
Arte-

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Arterial Needle ready armed with double Silk, and waxed, you are to pass it round, taking up a small Circle of Flesh, nigh the Mouth of the Artery, then comprehending a very small Linnen Compress between that and the Tie, you make fast with a close double Knot.

Some are of Opinion that the larger Portion of Flesh you include within this Circle, the securer must the Artery be from Bleeding, because (say they) Nature takes up a longer Time in separating a greater, than a smaller Portion; a Reason not of much Weight; for how small soever is the Portion of Flesh included, yet being sufficient to stop a present, it will be sufficient to prevent a future Flux; because any Portion when tied and separated thus from the Life of the whole, which is thrust off by a *Syssarcosis*, or Concarnation; and therefore the the Mouth of the Artery must be as securely shut up by that intervening Substance, at the throwing off a small, as a great Portion.

Helps in the former Methods.

other different

The Operation.

What may be added to either of these three Methods, as co-juvant, are *V. Section*, *Evema's*, cooling Emulsions, Opiates, or Means of Revulsion and Derivation.

There is a Necessity for this Operation, either when a Limb is so shattered by a Shot or Splinter, as to be plainly past a Possibility of Reduction; or when a Wound (tho' not large) happens in a great Joint, such as the Knee or Elbow; whence acute Pains and Convulsions are

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are excited,) or probably would be,) endangering Life; and if healed, be not only useless, but troublesome; or, lastly, when any preceding Hurt or Distemper has induced a Sphacelation: There are other Cases that may indicate Amputation; but in these there is little Room for Suspence.

Your *Apparatus* should be laid in three Dishes; the first should hold your Instruments; Knife, Catlin, Saw, Arterial, Forceps, and Needle; the second, a Lint-Pledget or two, half a Score others made of soft Tow, and different Sizes, and with them a large round one, called a Cap, spread with some astringent Mass to cover the rest; and in the third, your Rowlers and Cross-Cloth.

Thus ready, your Patient should be placed on a Stool; both that he may be supported behind; and that the Assistance about you may be more commodiously used. As to the Surgeon's Posture, it may differ to Advantage. When there are two Bones to divide, the Inside is undoubtedly best; because taking the lesser Focil with your Saw at the same Time, with the greater, there is not that Hazard of a Fracture or Luxation; but if your Amputation is to be made above the right Knee, or Elbow, then your right Hand should be outward: You have greater Liberty in this Posture, more Scope for performing the Operation, and stand better for applying the Dressings.

How the Patient must be placed for amputating.

We

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Turniket.

We begin with fixing the Turniket: And for this Purpose, having drawn the Muscles tort upwards, we enfold the Thigh or Arm with a thick Linnen Compress. If it be the Thigh to amputate, we put also a Wadd under the enfolding Compress, on the Inside, for a better Compression on the larger Vessels that descend there: Then placing the middle Part of the Ligature exactly on it, the Ends are brought over the Compress with a double Hitch; and being tied down to the upper or outward Part of the Thigh, or Arm, the Turniket is put in, and twisted to a Degree sufficient to check or interrupt the Course and Motion of the Blood. This Ligature ought to be a Silken, or other Cord, that is not too hard, but very strong; for if it should break in the Operation, (unless you are very quick in supplying its Want with a strong Gripe,) your Patient is infallibly lost. As I remember it happened in an Amputation above the Knee I was present at, on Board Mr. C——. The Turniket broke; and while every Body was surprized and confounded for another, I instantly interposed, and with a strong Gripe supply'd the Room; when otherwise, the Man must have expired with the Flux in less than two Minutes. This by way of Caution, that Surgeons may keep a Presence of Mind in Action, and be prepared against such Accidents.

Besides

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Besides these, we fasten two other Tape Ligatures at the very Place we are to make Amputation, leaving only Room between them for the Knife to go round. The Use of these are to swell the Flesh to the Knife, and guide it for a smooth Circumcision which you are now to make, bringing it at once as near the Bone as you can, and as far round. What is wanted of a compleat circular Cision, you are to supply with another Stroke of the Knife or Catlin; with which last also you are to separate the Flesh from between the Focils, and clear it for the Saw.

The Saw is to be set on both Bones at once, (if two,) and divided at as few Strokes as possible, taking heed in the Division, that the nearer you come through, the easier to move, lest the Bones should splinter: If that should happen, there is a Cutting Forceps described in the *Chirurgia Curiosa*. Tab. II. proper for pinching such Processes off.

How to use the Saw.

Where the Bone is single, we chuse to take a Piece of firm Cloath to hawl up the Flesh from the Saw, (the Bone proving always better covered for it :) It is made by only slitting to the Middle; the Slit falls on the Bone, and crossing the Ends underneath, you use one Hand there, the other above. In doing all this, a Limb is to be kept steady and firm by an Assistant at each Hand of you, or instead of them (when it is a Leg to amputate) that Instrument in *Chirurgia Curiosa*, Tab. IV. made in Shape

G

of

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of a Wooden Leg, and fixed to a proper Height for resting the Ham in.

The Limb being off, I shall suppose the Hemorrhage has been stopped by Deligation, (the Method most approved,) and proceed to to the Remainder of our Work, viz. the Dressing and Bandage.

Bones to be dressed dry.

The Ends of the Bone are to be covered, according to Custom, with dry Lint, (*sicca siccis gaudent*;) and to the Artery we apply thick round Pledgers dipped in warm *Ol. Terebinth.* one on another, to render it still the securer; for as that will be the deepest Part of the Stump where the Artery is, so without this Caution of raising it at least to a Smoothness, the Compression in rowling would be least where it is most wanted: The rest of the Stump also, we cover with an answerable Number of Pledgets pressed out of the same; over them a large Cap armed with some astringent Mass, a Bladder of the like Dimensions, (made pliant by immersing in warm Water,) two long Compresses to cross on the Stump, and come to a Hand's Breadth, or more, above it; and, to fasten all, two Rowlers.

I chuse to use both of them. Two Rowlers, single-headed. The first is short, and beginning close to the Edges of the Stump, is finished with six or seven Turns upwards: The other is very long; and having begun with a Turn or two at a convenient Height, is immediately carried cross the Stump as high on the other Side, and so returned back-wards

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wards; and forwards over all Parts of it, as our Length will allow; reserving only to match at last as will fasten with six or seven straight Circumvolutions, to make the Whole fit smooth and equal. If it be a Leg, the Knee should be always bent before Rowling, otherwise the Joint contracts a Stiffness that will difficultly submit to it afterwards.

For the Cure an amputated Limb, our Endeavours are in the Best The Cure.

giving to prevent Pain and Fever, and to procure Digestion, to prevent a Fungus and Exfoliation; and lastly, to produce a smooth Cicatrix. The attaining these several Ends, resting chiefly in the Management of the Suture, is the Surgeon's peculiar Province, to which I shall principally confine myself.

Our first Dressings have this in particular, not being always Remarks on found trouble some to remove, and the first Dress for the most and loathsome Parts of the Blood being dissipated by the Heat of the Part, the remaining *Crusts* receiving some Mixture of the *Terebinth* cements them like Glue: However, since it must be done, we facilitate our Work, by squeezing our Sponges of warm Water on them, till they grow supple, and are thoroughly moistened; any Roughness in bringing them away, would endanger a fresh Flux, for would a Hemorrhage soon arise; because the Warmth of it relaxes the solid Parts, and makes the Motion of the Blood in the Artery stronger.

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The first Opening of the Stump should be in about forty-eight Hours from the Operation; and the Dressing then changed for a Digestive.

*R. Ung. Basilicon ℥ss. Liniment. Arcei ℥iv.
Ol. Tereb. Lini & Hyper. a ℥j. M.*

Or the Unguent. Digestiv.

To be renewed every twenty-four Hours after, to be applied warm and quick, in a Place least exposed to Air; and when done, the Stump placed on a soft Pillow, with a little Elevation, and kept moderately warm.

At our next and future Dressings, a Fomentation may be used, designed to give a Perforation, and cherish the Heat of the Part, which of Consequence promotes Digestion. Ointment more or less, according to the Age and Disposition of the Patient, a good Digestion succeeds, in which the Pain assuredly remits, and the Fever, which was only symptomatical, vanishes. At this Period, therefore, there ought to be a remarkable Alteration of our Dressings, our great Care being now to prevent a *Fungus* and an *Exfoliation* of the Bone, neither of which can be better answered, than by forbearing any further Use of greasy Applications, for such allowedly do both; they soften the Bone, by increasing Corruption, and render the Flesh soft and spongy. But then, though an Alteration becomes necessary to lessen too great a Discharge, and prevent or remove a beginning *Fungus*, we must not on the other Side do it by Medicines too astringing; for

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for when the Quantity of Matter is large, the giving too sudden a Check to it will occasion Apoplexies, Tumors, and painful Contractions of the Muscles. Those that I have used, and found best to answer against such Consequences, are the following:

℞ *Spt. Vini. Aq. Fontan. a. p. a.* Incarnative and
cum Mell. Rosar. Edulcorat. Detergent.
 ℞ *Decoct. ex Herbis Fomentat.*
℥viij. Aq. Regim. Hungar. ℥iij. Ol. Tereb.
℥j. M. pro usu Vel.
 ℞ *Plegiata tepide expressa a Fotu Fortiore.*

These, or such like, being moderately astringent, engross the Blood, as it were, from flowing to the Part, in a greater Quantity than is requisite for its Nutrition; and are also a fit Dressing for the Bone, as preventive of its Exfoliation, as dry Lint can be, of which some are fondly superstitious; and is a Choice, in my Opinion, more or less indifferent, as a Bone is to be a lesser or longer Time exposed.

Where the Bone is single, and we have made use of that Cloth Exfoliation above mentioned, it generally appears so well covered after, and guarded from the Intrusion of Air, that Exfoliation is often prevented, or (which is the same) becomes insensible; and, on the other Side, where such a Caution cannot take Place, (as in the Leg or Cubit,) the Bones become necessarily prominent, and exposed to the corrupting Quality of the Air, and Fluctuation of Matter; both which concur to render such Prevention difficult,

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cure, if not impossible; nay, perhaps, it would rather expedite the Cure (in these Cases) if we helped (from the Beginning) to foul it with the same greasy Applications we use to the Wound.

Cautions in the Progress of the Cure.

There is another Observable, or two, to be heeded in this Progress of the Cure, and they are these:

First, That Edgings be constantly used, spread with *U. Desiccans* for facilitating and bringing the Dressings off clean and easy, and forwarding the Cicatrix, to which will very much contribute also a good Management of the gross Cloth. I enclose the four Ends of two suitable Lengths of Cloth, under several Turns of the Roller above, and then crossing the Opposites on one another, contract the Lips of the Stump night daily.

The second is, to mind that the Incarnation do not swell in one Part, and sink in another, but that the Whole have a smooth and equal Surface; an End that must be answered by the different Applications of Incarnatives, or Epu-
latics.

Digestion and Cicatrizing being the two principal Ends pursued in the Cure, I have shown how the Obstacles of Pain and Fever to the first, and of Fungus and Exfoliation to the latter, may be best avoided or remedied, as our Dressings and Management of the Stump can do it. It remains in the second Place, to make these local Applications more effectual, that we prescribe a Regularity in the Non-Naturals, and give convenient Internals. The Patient

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Patient should be kept in a warm Air, in an easy Posture, free from Passions, and with a spare Diet at first, and Phlebotomy, *Enemas*, Anodynes, cooling Emulsions, and Julaps, administered as they are alternately indicated. A few of the easiest Preparations are as follow:

For an *Enema*, R. Decoct. *Clysteris*. *Enema*. *Ruyes Salis*, Syr. *Rosar.* a. ʒi. Ol. *Anisi* ʒi.

R. *Enema* commun. *Decoct. Clysteris*. ʒi. Ol. *Chamem.* Sat-
char. *Culmar.* a. ʒi. Ol. *Anisi* ʒi.

For an *Anodyne*, R. Laud. *Londinens.* gr. ʒi.
R. *Enema* commun. *Decoct. Clysteris*. ʒi. Ol. *Chamem.* Sat-
char. *Culmar.* a. ʒi. Ol. *Anisi* ʒi.

R. *Enema* commun. *Decoct. Clysteris*. ʒi. Ol. *Chamem.* Sat-
char. *Culmar.* a. ʒi. Ol. *Anisi* ʒi.

R. *Enema* commun. *Decoct. Clysteris*. ʒi. Ol. *Chamem.* Sat-
char. *Culmar.* a. ʒi. Ol. *Anisi* ʒi.

R. *Enema* commun. *Decoct. Clysteris*. ʒi. Ol. *Chamem.* Sat-
char. *Culmar.* a. ʒi. Ol. *Anisi* ʒi.

R. *Enema* commun. *Decoct. Clysteris*. ʒi. Ol. *Chamem.* Sat-
char. *Culmar.* a. ʒi. Ol. *Anisi* ʒi.

R. *Enema* commun. *Decoct. Clysteris*. ʒi. Ol. *Chamem.* Sat-
char. *Culmar.* a. ʒi. Ol. *Anisi* ʒi.

R. *Enema* commun. *Decoct. Clysteris*. ʒi. Ol. *Chamem.* Sat-
char. *Culmar.* a. ʒi. Ol. *Anisi* ʒi.

R. *Enema* commun. *Decoct. Clysteris*. ʒi. Ol. *Chamem.* Sat-
char. *Culmar.* a. ʒi. Ol. *Anisi* ʒi.

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These, or the like, will be wanted most in the Beginning of the Cure, while Pain, Fever, and Faintness, afflict the Patient, and the Stump is indigested: But as these are found to remove, those may be laid aside again, and a greater Liberty in Diet assumed; yet still, under such Rule as may best support Strength, and yet not generate a *Hypersarchofis*, which too-full Feeding will do.

I proceed now to an Observation, of two, for supplying what is defective in the general Practice, particularly to shew what different Consequences I have found under either Method of stopping the *Hæmorrhage*; and this I shall do in two or three Observations, made after an Action in the *Lion Man of War*, Captain *Galfridus Walpole* Commander.

Our Fleet, under the Command of that brave Admiral Sir *John Norris*, lying in *Vaia Bay*, near *Genoa*, March, 1710-11. in order to embark some *German Troops* for *Spain* (the last, I believe, that were sent thither during those Wars, King *Charles* leaving *Spain* the September following.) We espied two tall Ships early in the Morning standing in for the Land, and after their descrying the Number and Strength of our Squadron, lacked off. On which the Admiral made Signals for our Ship, *the Severn and Lime*, to chase. — We did; and at half an Hour after Nine in the Morning, came up with four Sail of French Men of War (from fifty to sixty Guns each) who were brought too in a Line to fight us: We were not out of hearing of our Fleet when the Battle begun, and therefore immediately on the Noise of our Guns,

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Guns, the Admiral sent other Assistance; but they did not arrive quick enough to save what the Sailors call a *Threshed Jacket*, having about forty Men wounded in an Hour's Time.

I. Observation on stopping the Hemorrhage by Deligation.

I had my Dressings prepared in the Manner before observed, and amputated at five or six Fingers Breadth below the Knee, stopped the Hemorrhage by Deligation, applied Pledgets of warm *Oil of Turpentine*, a Cap armed with *Astringent*.

For the Evening after the Operation, he continued very cheerful, in a manner thoughtless of the Loss of his Limb; but next Morning, I found he had been uneasy, restless, and had a high Pulse, Nausea, and Thirst, an Alteration common, indeed, after such Pain and Effusion of Blood and Spirits, and may furnish out two Remarks. *First*, That the Heat and Surprise in Action makes it the properest Time for amputating, Men meeting their Misfortune with greater Strength and Resolution, than when they have spent a Night under Thought and Reflection. And, *Secondly*, that a symptomatical Fever, more or less, is the sure Consequence of this Operation.

The present Patient I blooded, gave him diluting Drinks, the following Julap, and, for two or three Nights successively, a Paregorick Draught.

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By Cinnam. Fort. Theriac. & 3j. Ag. Florid
Syllf. Sal. Absynth. ʒi. Syr. Limon. q. s.
P. Jalap Dos. Cochlear ʒi. per Olices ʒi.
quentes.

With these, and a Fomentation to the Stump every Dressing, we in less than a Fortnight brought on a tolerable Digestion, the Fever and Inquietude by that Means gradually vanishing; Circumstances that always indicate to me an Alteration of Dressing, and which, according to my constant Practice, was thus:

I spread my Edgings with *U. Diapomphol* and covered the Interpace with Pledgers pressed out warm from a Decoction of Fomentation Herbs, reserved clear for that Purpose, and mixed with a third Part of Spirit of Wine or Brandy.

The Reason of this Alteration soon appears to those acquainted with Practice; for when Digestion is obtained, and the Fever abated or gone, should you continue to Unguents and Digestives, the Stump would be soon overrun with a *Hyperæcchæ*, not only untightly, but a very great Impediment in Cicatrizing, obliging often to the Use of a Vitriol Stone, or other painful Echarotics, to keep an even Surface necessary to advance the Cicatrix.

The Practice above prescribed had here the desired Success; the Flesh was rendered hard and ruddy by it, hindered in too quick a Growth, the Wound kept clean, and Nature left to proportion out her own Measure in the Discharge, the Stump from that Time visibly lessening every Day.

As

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As it contracted into a smaller Compass, I found myself obliged to wait for an Exfoliation, which, in the Whole, took up about seven Weeks, throwing off then in a deep black Scale; after which I met with no other Impediment, purged him once or twice, and finished the Cure.

Observation II. and III. on stopping the Hemorrhage by Escharotics.

JOHN RICE, and WILLIAM SMITH.

I had two other Amputations of the Leg, the Stumps of *Necessity* shorter than usual, and stopped the Hemorrhages with *Chirurgical Romanum*.

The Patients felt, from the Beginning, a more than ordinary Pain, quickly inducing Fever, and the Consequence of that large Quantity of undigested *Synovia* from the Stumps, which, by the Way, kept also rigidly straight, as though convulsed. Effects, that might, perhaps in Part, proceed from our dividing the Muscles too near their tendinous Insertions at the Knee, but no doubt were chiefly imputable to the Escharotics.

I endeavoured to relieve and strengthen Nature against the Assaults of Pain, by *Venesection*, *Enemas*, Anodynes, and contemporating Julaps; and to the Stumps, an assiduous Use of Fomentations, preserving them from the Air and Cold, as much as possible.

After

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After a Fortnight this was the Issue: From one of them we never had any true Digestion, emitting instead thereof a deal of thin Glycer, and, at length, from the extraordinary Pain that continued with it, a large Tumor formed round the Juncture, filled with the same indigested Sort of *Serum*, which the natural Heat was too weak to concoct. I opened the Tumor, and on a Discharge of it, the Pain and Fever seemingly remitted, and, with warm Pomenting, gave Hopes for some Time of Success; but an obstinate Looseness supervening through his fretful and uneasy Temper, he kept languishing for about a Month with it, and died.

The other, though much older, was of better Habit; and by the same Means that had proved unsuccessful there, this Stump was at length brought to Digestion, and thence forward contracted every Day: which, for three Weeks after Amputation, had been indiscernable.

What I shall farther take notice of from this short Stump is, That although the Joint had continued painful, and inflexibly straight for several Weeks, yet as the Wound closed into a lesser Compass, and covered the Ends of the Tendons with a Cicatrix, it gradually suppld, and became easy.

Observation

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*Observation IV. on stopping the Hemorrhage
after Amputation by Cautey.*

Captain WALPOLE.

This Gentleman had, likewise in the same Action, the Right Cubit so shattered, as to be past any Remedy but Amputation. I chose to do it above the Elbow; because the Fracture, reaching very near the Joint, would not admit the sustaining it against the Division of the Bones below.

The first Dressings, to stop the Flux, was only hot *Ol. Terebinth.* After viewing it a Minute or two, and no Stain appearing on the Towel, I concluded all was secure, and caused him to retire to a Bed, nigh Hand, from our Hurry, and Confusion with the other Wounded. After he had lain some Time, I was alarmed with the News of a fresh Hemorrhage, and found, at lifting up his Arm, so great a Quantity had issued through the under Part of the Dressings (unheeded either by himself, or Servants,) that when I came to him, I found his Speech faltering, his Countenance very pale, and so faint with the Loss of Blood, I feared his Expiring. On Circumstances so surprizing, I fastened on the Turniket again, directing a Cautey to be heated over half a Dozen Candles, and finding, when the Dressings were off, the Blood to be thin and serous, ouzing through the Vessels, notwithstanding the strictest Compression, I applied it: The imminent Necessity
and

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and Danger is Excuse sufficient for so effectual, though obsolete a Practice.

The Patient at taking off the first Dressing was faint and qualmish, and the Stump, through Striciness of Bandage, or Defect of Spirits, blistered and excoriated: These I covered with *Ung. Album* spread on Linnen, fomented the Stump well, and dress'd with a warm Digestive, endeavouring to relieve him inwardly with Cordials; and afterwards his feverish Intemperature, by Venesection, an *Exema*, and Emulsions.

At our Return to the Fleet, which was in two or three Days, I proposed to him the calling in two or three of our skillfullest Surgeons to advise with, not only as a Duty to a Gentleman of his Distinction, but as it might accrue to me by their Assistance in the Cure, might possibly in Time place a Man in one of the King's Yards. He assured me, he was furnished withoot. But I perceiving, he pitched (as usual) on the Men of Name (the Surgeons of the Hospital-Ships,) but whose Capacities deserved Contempt.

We differed in our Judgments and Management: They ascribed the Fever and Exacerbation of Pain entirely to the Caustery: I presumed, that the Fatigue of two Dressings, a greater Loss of Blood than ordinary, a Change of Lodging, warm Weather, and the Noise and Confusion of a continued Chace, might conspire something towards it, but granting the other Principal, (yet if done of Necessity, and what appeared then, the only Means of preserving

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preserving Life,) our Aim now was not to cavil, but apply the proper Remedy; which certainly should have been in a long Use of the Fomentation at each Dressing, in the best Digestives, keeping the Stump always very warm in Flannel, and to have quickened this external Means of procuring Digestion, by allowing him more liberally in his Eating and Drinking, (a Regard being always to be paid, under such Accidents, to a Man's Customs in Health;) the Danger of a Mortification here, being plainly from a Defect and Paucity of Spirits, which this was the likeliest Way to restore — But our Digestive was not so good, under those *Masters of Skill*, as might have been: (*U. Bahlic, or Hyperic. p. a.*) The Fomentations not used so long, nor had the Stump that advantageous Warmth I proposed: and what was worse than all, the Patient restrained from an accustomed Glass of Wine, and tied down to a slender Sustenance of Gruel and Panada. This kept him in perpetual Anxiety and Inquietude; which he sustained with equal Fortitude: And when at length, I represented it warmly, to be in a great Measure the Effect of our Proceedings, and which we perceived likely to prove a *Mortification of the whole Limb*, they were perswaded, and the Patient relieved by a better Rule, (I mean that just mentioned.)

However, it was a Fortnight from the Operation, (an unusual Length of Time) before we perceived any Thing like a Maturation from the Stump, purely from this wrong Method: But when on reforming it did appear, the

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the Pain and Fever immediately mitigated, and is an Indication of infallible good Portent.

But here again, at this critical Period, instead of cherishing the Maturation, which would have entirely dispelled all Danger, we changed our Digestive for Dressings of *Aq. Calcis*, on which a rigid and painful Contraction of the *Extensor-Muscles* ensued: Thus accounted for, That in Operations like this, accompanied with great Pain, Nature always directs a greater Affluence of Blood to the Part; and when by soft and proper Applications, its Conversion to Matter is assisted, the Cure advances with Safety and Ease; but if the unreasonable Afflictions of a Medicine (*Aq. Calcis*) denies this Liberty, and gives a hasty Check to the Discharge, perverting, as it were, Nature's Course, than the Blood that was wont to undergo this Mutation stops, and riots in the Muscles, producing sometimes such painful Contractions as we here met with, and sometimes Apoplexias. Agreeably to this Reasoning, I should have returned to a good Digestive, i. e. not only the topical Applications for it, but have taken off the Restraint in Diet he was again put under on this Account; because in my Opinion, the Stomach itself (where a Distemper has not perverted the rational Faculty) is the best Director as to the Fitness or Unfitness, Quantity or Quality of Food to be taken in, and a temperate Freedom is really more necessary at such Time, to support against the Efforts of Pain and Uneasiness, and which, if not so, the Stomach would nauseate and reject.

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reject. But although the Accidents plainly arise from a sudden Change of Dressings of so different Intention, yet it would have been acknowledging a Fault to have said so, which, in Consult, can hardly ever be: The Faculty of *Warwick-Lane* know this, That whoever is called in upon another, is deemed of the Superior Capacity, and on Miscarriage is not culpable in Point of Judgment; it was the Patient's unhappy Neglect only, that he did not call sooner.

We dressed on with Pledgets pressed out of *Aq. Calcis*. The Tumor and acute Pain following (with few or slight Intervals of Ease,) for the Space of a Month or five Weeks, till apprehending the ill Consequence which my Coadjutors, I knew, would unwillingly take a Share in, I over-ruled, with some Impunity, to change our Edgings for the softer Unguents; which making, larger than ordinary, a more assiduous Use of emollient Ointment and Fomentations, and continual reclining on a soft Pillow, we found at length the Cicatrix drawing in, and those Accidents gradually diminished.

Our last Alteration was a Pledget of *Diapom*: completing the Cure in eight Weeks, but without Exfoliation; which became the Occasion of some after Trouble, the Bone, at several Times for four Months throwing off some small Scales: Their first Notice was by a light pricking under the Skin, which growing still more troublesome, would make their Way through. After this the Cicatrix remain'd firm.

SECT.

SECT. I. Gunshot Wounds of particular Parts.

In our late *French Wars*, in the Year 1707. being stationed in the Channel, we now and then, in the *Tartar*, used to lose the Squadron, and make little Southerly Excursions, in hopes of a Prize; or to meet the *Dutch Vessels* from *Bourdeaux*, who being our good Friends and Allies, we made to traffick with us at pretty cheap Rates.

One Afternoon, as we were praying upon this Occasion, we espied a Ketch bearing down to us with full Sail, and three Ships chasing and firing at her, as a Decoy: She ran close under our Stern (as we Lay to) but fearful of their first Design, which was to Board us, only hoisted their *French Colours*, fired a Volley of Small Arms, and Struck.

We had like to have been too late in discovering the Cheat, the Gale having brought the other three Ships very near, (before we could get our Boat out to take Possession of the imagined Prize,) which we were about to do, but not being answered by proper Signals, turned tail, and were chased by them: We were a *Clean Ship*, and Night drawing on, favoured our Escape, without any other Damage than the following:

EXAMPLE

EXAMPLE I.

A penetrating Wound of the Thorax.

James Smith, one of our Seamen, received a Musquet Shot through the *Thorax*; it struck on the Body of the Right Pectoral Muscle, and passed out close to the fifth or sixth *Vertebra* of the Back, breaking off Part of their transverse Processes, as appeared by several *Ossicles* discharged afterwards at that Wound: I imagined this being the lowest of the two, the Eruptions from the *Thorax* would have been here; but it not proving so, I shall only take notice, that it healed in a Fortnight or three Weeks, with as little *Purulency* as might be expected, had it been only superficial.

The Stress of the Cure lay at the *Ossific* before; which I shall the more precisely examine. I extracted thence, at the first Dressing some Bits of Rag, which had entered with the Bullet, and were within View, dipped my Tent in warm *Oil of Turpentine*, because of a little Bleeding that appeared, a *Ceratum Diapalm*, over, placed him in Bed, half erect, but leaning towards the Wound, bled, and prescribed, as follows.

R. Elect. Fracastor. ℥i. Antim. Diaphores.
gr. x. fiat Bolus superbib. Haust. sequent.
R. Herb. Pectoral. pj. Rad. Liquirit. ℥j.
Sem. calid. ℥i. coquant. in Ag. Hord. ℥iij.
Colatur add. Vin. Alb. ℥iv. Mell. Anglican.
q. s. pro potu commune.

For

For the first Week the Patient was feverish, spit now and then bloody, had a very large Tumor spread over the whole Breast, made up of extravasated Juices, that might be felt fluctuating between the Muscles; and what was worst of all, a Discharge of six or eight Ounces from the Wound, at every Dressing, (which was twice a Day,) of a bloody *Serum*, sometimes mixed with Grains of a fleshy Substance, that prostrated his Strength and Appetite, and made him faint.

The Question now turned, Whence this Discharge was? whether beneficial? and the Service Tents contributed towards it? Neither of them, perhaps, improper to expatiate on in the Prosecution of this Cure. And, *First*, That the Discharge was partly external, might be judged by the daily sinking of the Tumor on the Breast, and yet the Quantity, Liquidity, and particularly its Expulsion on the Patient's coughing, were convincing Proofs, the greater Part was internal. How it should rather take its Course this Way, than fall on the *Diaphragma*, because the Matter of it was not from the Cavity, but Substance of the Lungs, and from the peculiar Make and Adhesion of that Bowel to promote it; for if they are not immediately tied to the *Pleura*, yet they have to close an Adherence, (especially if tumify'd,) as makes the Wound but one continued Orifice, or Conduit from without, into their Substance, demonstrable by the Force the Air comes out with, when they are penetrated; which would be scarce perceptible, were the Wound there to recede
any

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Way from the external one ; and again, were they not close to the *Pleura*, more would fall than does (between it and the outer Membrane) on the *Diaphragma* ; but by this apt and convenient Situation, and peculiar Make, (separate little *Lobes*,) it comes to pass, that when the internal Membranes and Vesicles, constituting their inward Substance, are swelled and loaded with extravasated Juices, from the torn lymphatick and capillary Vessels, that the direct Course of throwing off this Incumbrance, must be through the Wound ; and the Breast being more dilatible than the hinder Part of this Cavity, their expulsive Tendency is more that Way ; and therefore the Wound that is forward, though higher, can and will better (with a proper Posture) divert them of any extravasated Load, than that behind, though inferior.

Hence we may learn, that whoever shall endeavour to pervert this Course of Nature, in Wounds of the Lungs, under Pretence he must be relieved by an *Empyema*, Discharge by Urine, Expectoration, &c. must inevitably hurry on fatal Symptoms, since none of these Ways can discharge so much, or so seasonably, as is requisite ; and also that those do endeavour it, who obstruct this natural Course at the Wound, with large thick Tents, and tort Bandage.

Secondly, As to Tents, how and in what Manner they were useful here : And that was by keeping the Wound open, they facilitated the Expulsion of those tinctured Serosities, and Bits of Membrane that I have observed were discharged from within, and at the same Time, conveyed

a proper Medicine to the Bottom of the external Wound, for forwarding the Separation of the *Eschar*; which being always soonest at the outward and most exposed Part, it would have fell out (had the Orifice been dressed only with a Pledger) that the *Eschar* had come away soonest there, and so contracting, had prevented, or at least impeded the necessary Work of Extrusion; they were therefore highly necessary: And my Manner of making them more effectual at this Time, to the Purposes intimated, was to have them soft, slender, of a Length, short of the Thickness of the containing Parts, and dipped in a warm Digestive. I left a Thread to it always, made Illigation over the Breast, a large discutient Emplaster, and thick Linnen Compresses, braced on with a Flannel Jacket.

I have hitherto considered the Patient only to the first Period of seven Days: It remains to give other Observations in the Sequel of the Cure, particularly as they relate to the Tents.

About the seventh Day the Air came out of the Wound with considerable Noise and Force, which till then had been scarce perceptible, either because the Patient's Want of Appetite and Weakness made the Office of the Lungs performed more easily; or that the *Eschar*, Gun-shot leaves, obstructed its Exit; or, lastly, that the Pain and the Tumor of the Muscles contracted it closer; or, perhaps, all together; and now, as the Tumor began to discuss, Appetite and Expectoration to mend, and the *Eschar* to drop off, the Air and Extrava-

vation

vasation had a freer Passage, and the Discharge lessened.

About the fourteenth Day the Discharge having diminished considerably, and a Digestion appearing on the Tent, I rather lengthened it, and sprinkled the upper Part (as often as wanted) with an Escharotick, to prevent the Orifice contracting too fast, and for laying a Foundation of incarning from the Bottom. Every Thing now contributed to help us; for after two or three Days more, scarce any Thing came away at the Wound with coughing, and having a plentiful Expectoration, and sometimes a thick muddy Urine, I endeavoured to assist those favourable Evacuations with pectoral Drinks, Apozems, &c. shortening the Tent gradually; and at the End of a Month or five Weeks, threw it quite out, and healed. He continued after this, afflicted with an Asthmatick Cough for two or three Months; but recovered of that too at length, and remained only somewhat weakened in the Motions of the Arm.

From these latter Periods of the Cure we may further observe, concerning these penetrating Wounds by Gun-shot, *That they are less dangerous, if they do not hit on large Vessels, than Wounds made by sharp Instruments*; because the Celerity of their Flight makes a superficial Extinction of Heat as it goes, which lies as an Eschar or Cover on the torn Vessels, not thrown off, but by a succeeding Substance that closes them.

EXAMPLE

EXAMPLE II.

Penetrating Wound of the Thorax.

Daniel Rainwater, in the Year 1710. in a Quarrel at a Bawdy-House in *Leghorn*, received a Push with a small Sword, under his Right Pap, which we could probe to the Depth of three or four Inches; the Air came out waving the Candle, when nigh, and a small Difficulty of breathing with it.

I suffered him to bleed at the Wound pretty much, took eight or ten Ounces also from his Left Foot, dressed with warm *Ol. Tereb.* a Cerate over, and put him to Bed with a quieting Draught.

Next Morning the Symptoms were worse, and (as in the foregoing Case) a large Tumor was spread over the Breast, which felt fluctuating between the Interstices of the Muscles, but no Discoloration.

The Penetration of the Wound, I considered, could not be of use towards discussing this external Tumor; nor (as it appeared small, and almost closed,) of much Benefit to the Lungs, supposing any Rags of Garment carry'd in, though with a sharp Weapon; wherefore I concluded, keeping the Wound thus open with a Tent, and facilitating the Intrusion of Air, was to urge Putrefaction, and aggravate the Symptoms; and therefore I kept on only a small Pledget of common Digestive, a Cerate over, warm Embrocations, and Flannel

to

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to the whole Breast, with Panada and pectoral Decoctions for his Diet.

In a few Days his Breathing grew easier, the Tumor began to disperse and in three Weeks was totally dissipated; the Matter, of it, I presume, by help of external Warmth, Friction, and a quiet Position, remixing with the Mass of Blood.

EXAMPLE III.

An Eye struck out by a Splinter making one Side of the Os Nasi and Spingiosi bare.

Alexander Henderson, in that grand naval Fight of ours with the French off Malaga, 1703. had his left Eye struck out by a Splinter, making that Side of the *Os Nasi* and *Spingiosi* bare; and from which several little Splinters of them were easily drawn away with the Forceps. I cut away the lacerated Teguments in the Wounds, as far as they appeared to be insensible; dress'd it and the Bone immediately with equal Parts of *Tinct. Myrrh.* a Fomentation and Decoction warm'd; over that again Pledgets of Digestive, a Compress, and a double Fold of Linnen pinned down to retain all. Where one Side of the *Os Nasi* was perceived loose, stricter Bandage would have depressed and disfigur'd: Instead of which, I advise him to practise the Smoothing of it, with his Finger frequently, that it might fasten evenly.

In six Weeks the Wound was incarned, and healed; but soon gave Notice by a pricking Pain, Tenderness, and Tumor about it, that some Officles or Exfoliation was further to

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be expected. The Cicatrix being thin, I broke through it with my Probe, and enlarged with the Scissars, discharging a foetid Matter.

A small Scale or two soon came away by the Wound; as did also another through his Nose (on blowing of it;) after this it healed, and continued firm.

E X A M P L E IV.

A large Gunshot Wound on the Neck behind, baring Part of the Vertebrae.

Thomas Gibbs, in the same Fight, received a large Gunshot Wound behind on the Neck, baring Part of the *Vertebrae*. He lay for dead, and had been thrown over-board; (as such) but for some small Signs of Life, which others of his Gun-Mates perceived in him.

My Intention here (as in all Gun-shot Wounds) was to bring away every Thing extraneous, very loose, or jagged; to wash the Wound well with a warm spiritous Decoction; and then to fill the muscular Parts up to a Surface with Pledgets imbued full of the Digestive heated.

Next Day he gave Signs of great Uneasiness, but after four or five more, that assiduous Use of our Fomentation, and soft Dressings had begun a Maturation; he grew easier and walk'd about.

At a Fortnight the livid Colour in and about the Wound (the common Attendant of Gun-shot) was dispersed or digested off; but then as the Sense quicken'd, the Head and Neck contracted very much to the Left; and the upper

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per Lip of the Wound hid an Inch within the inferior, which spread in a *Fungus* over it.

To prevent the ill Prospect there seemed of an unseemly Cicatrix, a stiff and wry Neck, I thought it adviseable to keep him constantly to a supine Position, whereby the Fibres of the Muscles might the better answer in their Rectitude and Length; but our Patient rejected it, he being too alert for such Confinement, and indeed there proved no Necessity: For soon after, when the Wound was thoroughly malaxed with Maturation, the upper Lip of it appeared in Sight again, and depressing the other with Compress and Escharoticks, a Union was confirmed in about two Months, leaving little Obliquity or Stiffness.

EXAMPLE V.

A large Gunshot Wound, and Loss of the Gluteal Muscles.

John Carter, had a Splinter, in this Engagement, come close to his Groin, and in passing off carried half his Buttock away. We laid him by at present among our other Wounded, with a slight Astringent Application: Next Morning he was found in greivous Pain, the Wound very large, a great Part of the *Gluteal* Muscles on that Side being torn away, the *Ossa Innominata* bare in Part, and the whole, black, livid, and insensible externally. I made superficial Scarifications to the Wound now, and next Day applied three or four cauterising Buttons,

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Buttons, (one after another.) where the Insensibility or Colour led me to think a Mortification begun; and this without much Complaint from the Patient, filling the whole with thick Pledgets of Tow, dipped in *U. Egypt.* hon.

In a Day or two I had the Pleasure to see the Gangrene checked, signified by a red Circle round so much of the Lip as I had cauterized nigh, and is Nature's Effort to separate the Eschar, the remaining Part that had been left undone, and now covered with stinking cadaverous Sloughs, I repeated the Caution too, a little at a Time, for two or three Days, extracting now and then a Shiver of the Splinter and Bone, which was carefully looked after at every Dressing.

When I had finished the Cauterizing necessarily, I immediately dressed the whole Wound with Hot Digestive, used the Fomentation very warm, and half an Hour at least every Dressing, wrapping a dry Stupe wrung from it, and a large Flannel-Roller round all. Inwardly the best nutritive Food we could get him, instead of *unlimentary Decoction*.

In eight Days most of the Sloughs were separated, and in twelve all that little red Circle, or adjacent Inflammation, vanished; but then the Largeness of the Wound gave such an Increase to the Discharge, that from a cheerful Disposition he became remarkably weak and depressed, more so by a Looseness supervening, that very much abated the Hopes of his Welfare.

I kept him to the white Decoction, and an Opiate every Night, which relieved a little; but
to

to the Wound which I consider more essentially, (those being only the Dependencies of this,) there seemed two Intentions necessary; 1st, Was by all the Means we could to lessen the Discharge; and 2^{dly}, to keep the Matter from insinuating among the Muscles above or below: It oozing from all Parts on any Pressure as tho' rotting.

Here the vulnerary Decoction came in Use, not to drink, but to dress him with, mixed half Brandy or Spirit warm; and is always my Method when the Eschars, of any large Wound are separated, and Digestion obtained: increasing your Spirits, (and Astringives in the Decoction,) as you design to pursue more or less of this Intention. For here is the Caution again, if you are too sudden in the Check, you give Room for Tumors and Apostemations elsewhere; as was the very Case of this Man. I dressed him every Day as above; and to answer the second Intention, made Compresses from the *Ravinaum*, the Buttock, and on every Side towards the Wound, giving his Position in the Cradle, as great a Tendency also as could be consistent with any Ease: The Quantity of Matter lessened presently, and only a thin *Synovia* from the Bottom of the Wound at the Bone, (common where the Tendons and Ligaments are torn;) but a large, painful, and discoloured Tumor, at the same Time, spread itself at the anterior Part of the Hip, down the Abdomen into the Inguen and *Scrotum*.

It was now about a Month from his being wounded; and though this was a new Misfortune disheartening to our Patient, yet I did not

think it equal to the Advantage we had in lessening the Discharge; for now he daily recovered Strength and Spirit, the Wound incarning, and growing ruddy from all Sides. The Tumor indeed required Incision, (the Matter fluctuating under my Finger;) but I purposely omitted it for a Week, that my Patient had become heartier; and then opened and cured as in other Apostemations.

The Wound was high three Months in filling and cicatrizing, leaving a prodigious Scar, and great Lameness and Weakness on that Supporter, while I knew him, which was only the following Winter.

Scars are always equal to the Loss of Substance in Wounds at first: Nature has a Measure in the new Cover she makes of Flesh: Otherwise we might incarn to an even Surface, and skin the deepest Wound like a Scald, (a little rough and unvelled.) But, I say, endeavouring to exceed this Bound, is only creating a *Wound*, that will be an Impediment in Cure, and though we may assist, and it is our Duty, with Compress, Rowling, and Incarnatives, yet Nature, for the most Part, and in spite of our Teeth, will form the Cicatrix to her own liking.

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EXAMPLE VI.

A Gunshot Wound on the temporal Muscle.

William Lambeth, by a Splinter, received a lacerated Wound on his right Temple; the present small Flux of Blood was restrained with a Pledget of *Ol. Tereb.* and the Head Bandage: Our future Dressings a hot Stupe, or two, and the Digestive on Lint Pledgets.

The Sloughs separated deep, and the Wound digesting, I changed for the vulnerary Decoction aforementioned; and whether it was from this impacting, and, as it were, acidulating what should discharge, or rather a necessary Consequence of increasing Sensibility in the Wound, he unexpectedly about the twentieth Day from receiving it, and when the Wound was brought within the Compass of a Shilling, was seized with extreme Pain there, stretching to the other Temple; and so affecting his whole Head, that he fell into Vomitings, and convulsed in his Limbs and Body. I bled him, applied a large Vesicatory to the Neck, changed his Dressings, and gave at Night as composing Draught: Next Day he vomited again, and had involuntary Contractions of his Arms, though not to the same Degree, nor indeed ever after that I knew; the Wound being cicatrised in a Month.

The Use and Inference I would draw from this Chapter more particularly regard the Navy; and what *Mr. Wiseman* has writ upon the Subject.

And

And First, As in Action Men are more attentive to Life and Safety, so Surprise and Warmth of Spirit, when Life has made a glorious Escape, makes them more regardless of their Wounds; and therefore such as are judged curable, should have immediate Extraction of what is extraneous in them: Or if a Limb cannot be preserved, should then be amputated. Your Eye, Nose and Fingers, with the Patients Complaints, will give Directions; and placing them in the Posture in which he was first, will facilitate the Search. Where you are to take Notice not to open your Forceps in any dark Path; lest you tear away a Nerve or Tendon. What you do not remove while the Parts are flexible and warm, will very difficultly admit of it afterwards, when Pain, Tumor, and Fluxion comes on; nay it is better then to leave the Remainder to suppurate. Sometimes a Bullet if not drawn out, eludes the After-Search strangely; will slide through the Interstices of the Muscles, from a Thigh to the Leg, the Arm and Shoulder to the Cubit. A Slug * shot in at the external *Canthus* of the Eye, apostemated on that Side of the Neck, and the Slug was felt on the *Os Jugale*. Another, which † was shot between the Nose and the Right Eye, into the *Ethmoides*, used to rowl to and fro over the Roof of the Mouth some Years, and was taken out by an Incision through the *Os Palati*. A Shot in the Small of the Leg taken ‡ out at the Inside

* Wiseman, p. 412.

† Ibid. 417.

‡ Ibid. 411.

Inside the Thigh. — On the Outside the Arm cut out below the *Scapula*.

Secondly, In War, the Surgeon always should have Boxes of Dressings ready, Turnikers, some Tents, Pledgets, Buttons, and Dossils, in Sorts a great Number, without being armed; Rowlers, Compresses, Bandages, *Ferule*, *Lamina*, of different Size; and when the Ship is preparing for Battle, to arm your Needles, to lay the *Apparatus* for Amputation particularly, and your Instruments in Order, (as Art. 119.) the Ollop and Cable Tiers are cleared and spread with Canvas, for receiving your wounded Men, the Cockpit separated for Operations and dressing them, whence they are to be removed.

That every Thing may be in the best Readiness on your Side for their Reception, tear up your old English for present Use; mix up a Barrow for a Tringent, and have a few Urinals of your Caps spread with it; a Panicle of Oil Tents with others of Digestive, and some Pledgets ready spread with this; a large Receptacle of Cerate well malaxed with *Tereb. Ven.* and to make it sticky; two Chests, and a round Stanchion to rest your Wounded on for Operation, now Dressing round the Stanchion fix some Boards for a Dresser; and covering with a Bed of Binding, lay your Pocket Instruments, and such light Preparations as are of immediate Call; (but reserve the Bulk always in your Cabin, where they are likeliest to lie in Order, and unmoved.) On each Side the Stanchion, and round you, place some large Lights, in Stick-
ing

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ing-Iron Candlesticks, as taking least Room, and undisturbed by the Motions of the Ship; three or four moving ones also, and Snuffers.

Thus ready, the Surgeon is to consider, that Compound Fractures and Amputations will take up necessarily near the Whole of his Time. Flesh Wounds, especially by Great Guns or Splinters, are commonly large enough to discover any extraneous Body, to be extracted presently with your Fingers or Forceps; or if any Bits of Rag are suspected out of Sight, inject forcibly with Wine and *Ol. Tereb.* warm'd; if a Flux of Blood (very rare here) use the latter only, with Pledgets; concluding with one or two of those already armed with Digestive, or a Piece of Cerate, and a Bunting Rowler. But the other Cases plead strongly for Redress, and require abundance more of your Time to do it: The several Processes herein, I refer to what has been already said under those Heads; and shall only add here, that you are to be quick, as well as careful, in what Help you administer; for if the Action be warm, without Forethought, you will be in Confusion presently: And this Forecast lies in not suffering such wounded Men as can walk, and help themselves, to take up any Part of your Oilop (especially that nearest you,) but move on to the Hold or Foreship; and these more helpless to be laid by your Assistants in their Stead, keeping your Cockpit as clear as possible. To all we must give Cordials at this Time; and Wine has, in my Opinion, the Preference; because we are to quench Thirst, as well as refresh the Spirits.

Thirdly,

Thirdly, Maturely weigh the Necessity of Amputations before performed; because there have been great Losses of Bone supplied by Nature, and many have done well without. In Battle, indeed, you have Limbs so shattered, and hanging only by little Portions of the Muscles, as leaves no Room to hesitate; and these might be smoothed off with a Razor, (less dangerous than the Operation;) only it seldom happens, but that the Laceration of the Flesh, the Shivering of the Bone farther up, or the Length, forces you a new. If you would have a commodious and smooth Stump.

Fourthly, In a further Prosecution of Cures in Gunshot Wounds, we shall find that most of them, with the first Leisure, will require Venesection, Clyster, Nature commencing better Efforts after a little Ventilation But Purgings at the second Day's Dressing, I cannot approve; of any Thing that is likely to divert Nature from a Maturation. Certainly, *Fomentations, Digestives, and Cap-* The best Means to be taken, the latter no way with Gunshot Inconvenient in the Navy, where Wounds. a Copper-Pull or Oatmeal is boiled three Times a Week, (as good for Use as any,) and may be made more serviceable by adding Wine or Brandy to your Water in boiling, and at the Conclusion throwing in a little *U. Dialube*, or other Emollient.

When Gunshot was novel, these Wounds, by their livid Colour, were taken to be gangrened

greded or poisoned; and not unlike the former; for we find the Extinction of Heat is owing to the Greatness of the Contusion, (as the Ball or Splinter came with greater or less Force, direct or assant,) and are sometimes to a great Depth, calling for Scarification and Cataplasms, to help forward the Separation of the Eschars; *Omne quod contusum, necesse est, ut putrescat, & in Pus vertatur*: But there is this Difference, that where an internal Cause conduces, then (as in Cancers) though the outward Accident be slight, it is extremely dangerous: But in these Wounds (though large) there is no Danger on account of Colour or Extinction of Heat, unless a very ill Habit and preposterous Method of treating them induce it.

Fifthly, Mr. *Wifeman** has observed a Convulsion upon these Wounds, a Forerunner of Death: But there are Exceptions to this Rule; for though of very dangerous Prognostick, they are not always fatal; the greatest is from that Convulsion called *Spasmus Cynicus*.

A Mortification being what I have seen frequently happen after an Amputation, it may not be improper in this Place to subjoin the Cause and Cure of it.

It

* *Wifeman's Surgery*, p. 437.

Of a MORTIFICATION.

A MORTIFICATION is divided into Gangrene, and *Sphacelus*; which differ only in Degree, the one being an Incipient (*i. e.* has invaded superficially,) the other a perfect Mortification. In a *Sphacelus*, the Part is altogether void of Heat, or Sense, even the Nerves and Tendons; and therefore, past any Remedy but a new Excision: In a Gangrene it is not so, yet dangerous, according to the Advance it has made towards that, and seizes, (as Mr. *Wiseman* says,) in an Order of Progression, *First*, The soft and fleshy Parts, next the Tendons and Ligaments: And, *Lastly*, The Bones. But herein that Author is mistaken, a Gangrene sometimes instead of last, beginning first at the Bone.

Mortification distinguish'd into Gangrene; and *Sphacelus*.

To a right Understanding of this truly dreadful Disease, and the Remedies for it, we must learn to distinguish between what is an *Oesthumenos*, (or Tendency to,) and what is really a *Gangrene*; because their Treatments should be entirely opposite.

A Tendency to, or the Fore-runners of, a Mortification, are great Pain, Indigestion, abundance of thin *Sanies* from a Wound, a large Tumor, either *Pblegmonoides*, or *Erysipelatous*, and accompany'd with a Fever. Now, in whatever Wound or

Signs of a beginning Mortification.

Ul.

158 *Of a Mortification.*

Ulcer these Accidents happen, if they should be immediately treated as a begun Mortification, viz. either with Precipitate, in hopes to thicken that *Sanities*, or *Tebor*, to Digestion; or with strong Fomentations to the Wound, and Cataplasms of *Theriac. Venetic. & Sp. Vini* mix'd (as are commonly used,) the Irritation they give would increase the Fluxion beyond what the Weakness of the Part is able to encounter with, and consequently suffocate its Heat; so that what we feared, and (as we thought) were a *Refilling* comes upon us, *namque Mortification, and Gangrene*. Contrarily therefore we should treat such a Tendency with Lenients, our Business being here to contrive what may soften the Acrimony of Humours, relieve the Tension of the Solids, and ease the Pain, as the best Means to promote Digestion; which, under [the] Symptoms aforecited, must be retained, or the Part mortify. The best Medicines for this Purpose are the mildest and least irritating; foment only with a simple Decoction of Sage, or Elder-Flowers, and that purely to give a Perspiration to the Wound or Ulcer, *U. Basilic. Desfer. rub. a. p. 1/2*. and round the Whole, apply the following Cataplasm, which is not inferior to any.

℞ Farina Avinac. cum tantill. Croc. bulliat ad Consistentiam Cataplasmi finitæ adde Amyg. Porcin. 3j.

To these must be added proper Evacuations, to divert the Fluxion; to which likewise a spare Diet, and an *Anodyne* now and then, will very much contribute.

IF

If this Tendency, or *Oesthume-*
nos end in a Mortification, the
 Signs that evidence it, are a pale
 and livid Colour of the Flesh
 and Skin, Vesicles spread up
 and down, and a sinking of the
 Tumor; but chiefly, it is known from the lit-
 tle Share of *Heat, Sense or Feeling*, that is
 found in the Part, and the foetid Smell that
 arises in Proportion as those are extinguished.

Signs of a con-
 firm'd or per-
 fect Mortifica-
 tion.

To apply this more particular-
 ly to Amputation: A Gangrene,
 when it succeeds that Operation,
 is either through *Age, strict Ban-*
dage, a bilious or other vicious
Disposition of the Blood.

Happens in
 Amputations,
 from three
 Causes.

First, Age occasions it through
 a Paucity of Spirits, the Symp-
 toms soon displaying themselves
 after the Operation: For when Men are already
 sunk with declining Years, their Spirits on
 such an Operation naturally recoil, as it were,
 inwards, to succour the Principals, and keep
 up winking Life: Whence the Stump becomes
 deprived of that Supply on which the Life of
 it depends, and so a low Pulse, Qualms, Faint-
 ings, Convulsions, and cold Sweats, ensuing,
 their Misery in a short Time terminates in
 Death.

First, Age.

Secondly, Strict Bandage is a
 more common Cause than the former;
 and is the Occasion of it in Amputations,
 by intercepting the Blood and Spirits
 repairing thither; whence the Life of it is cut off.
 The only Sign dis-

*Secondly, Strict
 Bandage.*

covering
 20

covering to us a Fault of this Kind, is the acute and vehement Pain that instantly succeeds tort Rowling; I have known it so great, as that a Patient has chose to undo the Bandage (though at the utmost Hazard of his Life, and earnestly so forewarned) rather than endure the Agonies of it. Nor will it be adviseable to preach Patience and Resignation, where the Pain continues more than ordinary sharp, and we have any Room to suspect it proceeds from the Bandage; for though the Rigour and Violence may seemingly abate, it will not always be found owing to the Strength of Philosophy, but to a Mortification. Whence it appears, Security against a Flux should never be owing to Strait Bandage; and when we suspect it to be so, we should give proper and immediate Relief.

Thirdly, A vicious Disposition, or ill Habit, no otherwise causes a Gangrene, than as it brings on an Intemperie, Tumor, inflammation, &c. which at length may subvert and corrupt the natural Heat.

Let what will be the Cause of a Mortification, or let it soon or late take Effect, the Cure or Recovery is the same; which that we may the better compass, we are to understand, that whatever has once mortify'd, must and will separate and cast off in Sloughs; so that when it is said such or such Means are proper with a Gangrene, it is not meant, that the Part so mortify'd is recoverable by these Things; but only that they serve to prevent the farther spreading

Of a Mortification. 161

Spreading of the Putrefaction, and that they hasten the Separation of what is already dead: And these are internally Alexipharmicks.

℞ *Lap. Contr. Terva.* *℥i.* *Bezaar.* *Oriental.*
℥i. *Cochine.* *gr. xii.* *Cardui.* *sex.*
quarum una sumend. quarta quaque. Hora
superbib. Cochl. ij. *Fulap. seg.*
℞ *Aq. Epidem. Iberiac. q.* *℥i.* *Aq. Lactis.*
Cerasor. Nig. q. *℥iij.* *Syr. Caryoph. ℥j.*
Lap. de Goa. ℥ss. *Alkermes. q.* *℥i.* *M. P.*
Fulap.

Or, instead of these, any other alexiterial Medicines, Variety whereof may be found in Mr. Fuller's Pharmacop. Extemporan. his *Pul. Contra Terva C.* his *Pul. Pestilential.* *Pul. Alexiter.* *Bolus Cardiacus,* *Fulap. Idei,* &c.

They help in this Case by resisting Putrefaction, and strengthening the Spirits against contagious Vapours.

Externally; in which lays the Surgeon's chief Address, a Cure will depend in making *our Bandage at all Dressings only *retentive* in the beginning Mortification, that so a free Recourse and Circulation of Blood, may not be impeded: In an unwearied

* A Bandage is called so, where it answers no other End than keeping the Dressings on. For the like Reason, *Verdus* calls them, *Uniting, Dividing, Expulsive,* or *Attractive,* i. e. in several Hurts, they may be made to contribute towards those Intentions; and in some Cases, are Remedies of themselves.

unwearied Use of Fomentations, together with Frictions, Cataplasms, and warm Covering, to invite and cherish the Heat: And, lastly, in Scarifications, Lotions, and the actual Caustery.

Fomentations must be continued for Hours together, if we expect any Benefit from it, and then the Incisions dressed warm, with Pledgers out of the following Lotion:

*Rx Spt. Vinibene rectificat. ℥ Camphorat. ℥iv.
Spt. Sal. Armoniac. ℥l. M.*

Or, only, *Ol. Terebinth.* warm.

If you bring the Limb to plump and swell again by these, there is Hopes of recovering it; if not, there is none.

Scarifications need not be made through the whole Discoloration; where the Part is not entirely destitute of Sense, lesser Means may prevail, but where it is, we need not spare, but at small Distances, and to the Quick, how deep soever, it makes Room for Medicines reaching where they can stimulate and excite, to thrust off the Cadaverous Flesh.

Actual Caustery is the last Refuge; and is without all doubt the best Means can be used to resist Putrefaction: To make it answer our Hopes, we should apply it till its Effect reaches the quick Parts, and all the nasty foul *Sarxes* bred from the cadaverous Flesh, is in a manner dry'd up; then Nature immediately commences her Efforts for separating the Quick from the Dead; which, she would contend for, with less Success, if the Causticizing were done by Halves.

When

When we have used the Iron, we assist Nature's Endeavours for a Separation, by scarifying through the Depth of the *Eschar*, and dressing those Incisions with Lenients and Digestives; using to the Whole Fomentations and Cataplasms, as before. If we fail of our End, after these Trials, I see nothing remains but the Operation again.

OBSERVATION I.

• *A Gangreen'd Arm from Intemperie.*

Mrs. ELIZ. C——L,

A Woman aged Forty-seven, in the Spring of the Year, was suddenly seized with a darting raging Pain at the End of the Forefinger of the Right Hand; nothing to be seen but a white Speck, no bigger than a Pin's Head; yet at the End of two Days, by the Violence of it, was thrown into Delirium and Convulsions.

I cut deep into the Side of the Finger, let it bleed well, and applied a warm Cataplasim of Bread and Milk: On which she appeared next Day pretty ealy; but the next after that, again the whole Finger was spread with little Vesicles, discharging thence, and at the Wound, a prodigious Quantity of a thin nervous Liquor, which would wet a Cloth through ten double in an Hour's Time; and that as often as you would repeat the Tryal. This, and the Pain, convulsed her Night and Day in the Face, Body, and Limbs, alternately: Vesicles, Tumor, and Inflammation quickly spread the other

164 *Of a Mortification.*

other Fingers, the Hand and Arm; extending by the fifth Day (from her first Complaint) to the Elbow; the Hand growing livid and insensible, perhaps, hastened by a Purge or two, that I expected to have given Relief; but whereas, in so extreme Pain and Fluxion of Humors, any Attempt of Remedy, but to the Part itself, is fruitless.

To prevent Extirpation, I scarify'd quickly through the whole Tumor, from the Elbow to the Fingers End, slashing deep and sensibly where my Sight or Touch evidenced any insensibility, used a strong Fomentation for an Hour, dressed the Scarifications with hot Oil of Turpentine, and round the Whole, a thick and warm Cataplasim of *Farin. Avena*, wrapping over this Flannel to keep the whole as much as possible at a continual Warmth; for the Heat in these Cases, can never be too much; it may be taken off from the sensible Extremity with your Hand a Minute, if there is Fear of scalding; and in the Manner of Lodging and Covering, we may obviate any Prejudice from the Weight of Dressings.

Inwardly, I gave burnt Wines, Cardiacks, and Alexipharmicks.

I renewed the Fomentation and Cataplasim, in a warm Room, every eight Hours; and at three or four Dressings had the Pleasure to see the Gangrene checked, the Inflammation not so fiery red, &c.

At this Time her Stomach became very sick, rejecting every Thing she swallowed for twenty-four Hours, but had no Convulsions.

About

Of a Mortification. 165

About the fifth or sixth Dressing we had a little Digestion upon our Cataplasim, which increased every Day afterwards, the Pain and Tumor proportionably abating. In a Month, the Sloughs were all separated, and the Patient just well; when I was afresh alarmed with a large painful Tumor in the Left *Axilla*: I opened it on the Acnmination, and discharged by Virtue of our Cataplasim every Day abundance of the same thin Humor we had at the Finger, which in a few Days, with this warm Dressing, dispersed. After this, another of the same kind at her Left Breast, and broke out also in all Parts of her Body with virulent Pustules, venting the same Serosities, and then would dry and scale like a Leper. All which were removed as she recovered Strength, by some Mercurial Purges, and afterwards a Course of Mineral Waters.

No. 2. This Patient had her Terms freely a Week before the Pain in the Finger seized her, and after the Cure, or from that Time, never saw the least Sign of them again. From which I would thus reason: That the commencing and finishing of the Menstrual Flux are two remarkable Periods; and of so contrary Effect, as ought to have due Notice in a Woman's Life. The Alteration in her at Puberty is generally for the better; her Voice, her Complexion, and her Manners, are more lo- ciable; even chronical Disorders contracted from the Womb, will leave her then, when all Medicines else have been un-

unavailable: And, on the other Side, when this Flux is ceasing, she as generally suffers an Alteration for the worse: I mean not only in blooming Strength and Fertility, but they frequently, in their finishing, bring Pains and scirrhous Tumors upon the Stomach, or other Bowels, Dropsies, Tympanies, Consumptions, running red Faces, Rheumatisms, total or partial Pains and Lameness of the Limbs, Abscessions, Tumors, Gangrenes, Cancers: The Meaning of which must be, that these Periodical Discharges are a Vent of Acrimony, as well as Redundancy of Humors; because we see every little Irregularity or Suppression of them destructive of Health; and when they totally cease, they discover this more remarkably, according to Predisposition; which, if weak or ill, the Period of Age makes worse.

The Advice I would infer, is, That when the *Menstrua* are about to cease, guessed at pretty well by the Time of Life Women are arrived at, their *Discharge*, as they call it, i. e. not appearing for eight, ten, or more Weeks; and at other Times, coming three or four Weeks following on other Signs, I say, it would be convenient at such Notice to cut an Issue in the Leg, purge now and then, and confine themselves to a more abstemious Living than they were accustomed: It might prevent an unhappy old Age, which, perhaps, many fall into for want of such Caution.

OBSERVATION: H.

A Gangrened Leg from an ill Habit of Body.

Mr. G. J. — N.

A Gentleman about fifty Years of Age, inclining to Corpulency, by a Fall from his Horse got a severe Bruise on his Leg; which was presently attended with great Pain, Inflammation, and Fluxion.

I saw him about a Week after the Hurt received, being then attended by two able Surgeons: *The Wound was black, insensible, fetid, and tumefied,* to double the Bigness of the sound Limb.

We cut off the loose and cadaverous Sloughs with our Scissars, scarify'd about the Wound to the Quick, fomented and dressed with warm Spirits of Wine, a Cataplasm of the Seeds (boiled in half Wine, and half Water) round the Whole, and tied it up in a soft Pillow: These Dressings we renewed Morning and Evening, admitted him a Liberty of eating and drinking in a Way most agreeable to his Stomach, (especially burnt Wines,) gave every Night a Purgative Draught, and in the Day procured a Stool with a Clyster.

We soon perceived an Alteration. In three or four Days the Skin broke in several Parts about his Leg; in others pealed, giving large Discharges thence, and from the Wound, of a well-concocted Matter; and from thence forward, with common Digestive and Incarnatives,

tives, the Leg was in a short Time gradually restor'd. But, Poor Gentleman! he survived to an unhappy End, shooting himself some Time after; rashly provoked, it's thought, by the Selfishness of his Patron; who had provided him a Place, but subtracted the Salary for other Uses.

The Remarks I would make from the preceding Example are these:

First, That Contusions of the inferior Limbs (according to Corpulency and Age) have generally a worse Tendency and Prognostick than the contrary: And, why? Their Fibres are lax and weaker, less able to combat with the Injury of the Part, which still more promotes the Fluxion by its Dependency.

Secondly, That in Dispositions where this due Heat and Springyness of the Blood and Muscles are abated, the Humours are apter to stagnate, ferment, and putrify, and that with a more protracted Pain than in more youthful Subjects.

Thirdly, When upon such Accidents, Pain, Inflammation, and Fluxion, follow soon, and increase fast, we may conclude the Tumor not capable of Revulsion in those weakened Habits, and should immediately seek for Remedy at the Part affected. To check an approaching or begun Gangrene, and alleviate Pain by quickly bringing it to Maturation with warm emollient Dressings; externally, by Cataplasms and good Covering; internally, by generous Drinks and Cordials, that will circulate and warm the Blood for so benign a Transmutation.

CHAP. V.

Of RUPTURES.

WANT of Health is not always owing to Incomperance and Irregular Living; it sometimes proceeds from a wrong Constitution of the Parts of the Body. The weakening of any one of which is a *Disease*; and this Weakening, among other various Causes, may be occasioned by a vitiated Size, that probably induces an *Atrophia*. And this, in respect to *Ruptures*, may either be through the Fault of the Part itself, or else those that contain it.

To a right understanding the Nature of our present Subject, it is necessary to be acquainted with the Parts immediately concerned, *viz.* the *Peritonaeum Omentum*, and *Intestines*, *Scrotum*, and *Muscles* of the *Abdomen*; for whoever is ignorant of the Make and Use of these Parts, (that lie very nigh to those necessary for the Conservation of the *Individuum*, or Propagation of the Species) will be so far from redressing, that it is a Chance if he does not aggravate the Evils they may suffer under.

I

Mr,

Mr. Cheselden remarks, that from the Edge of the *Ilium*, to that of the *O³ Pubis*, runs a Ligament, to be over the *Iliac Vessels* as they descend to the *Thigh*; and that under this Ligament, together with the *Vessels*, he had twice met with a Rupture from the *Abdomen* into the anterior Part of the *Thigh* immediately below the *Groin*.

But, previous to the Description of their Make and Use, it will be necessary to observe in general, First, from their Site, that in *Umbilical Ruptures* the *Intestinum Jejunum* always comes forth first; in *Prolapsu Ani*, the *Rectum*, that no other than the *Ilium* passeth the Left of the *Anulus Muscularum*; and that sometimes Part of the *Colon* on the Right Side may be protruded further. If the Ligaments of the *Colon* may be dilated enough, the *Cæcum* may fall down into the *Inguen*. It seldom happens so, indeed; but I think would be less to be wondered at, than what Authors tell us of the *Ventricle*, or of the *Spleen* and *Liver* falling downwards by a Relaxation of their Ligaments. Secondly, From their Magnitude we may observe, that the *Caul* cannot in its proper Dimensions touch the *Inguen* or *Scrotum*; when increased in Thickness and Weight, indeed, it may dilate or break the *Peritonæum*; and this again may be casually broken or distended, (as other external Hurts happen,) and so let the contained Parts fall even into the *Scrotum*; but where the *Bubonocèle* shall be large, whether, or no, Part of it might not be safely cut off?

may,

Of Ruptures.

may, whether ever the Parts can be restored to their natural State, or secured from interminating Symptoms without it? From the Processes of the *Peritonæum* (through which *Ruptures* in both Sexes fall,) it does not appear, that any considerable Part of the *Intestine* (especially stuffed with Excrement) can pass; and that therefore their arriving sometimes to such Largeness, and Easiness of slipping down, must be from the frequent stretching and dividing the *Muscular Fibres*, long and neglected Bearing and Tendency of the *Caul* and *Intestines* towards the *Inguen* and *Scrotum*, external Hurts and Strains notwithstanding, and then contributing a Share: From which Frequency, and the Occasion of it, we frame our Prognostick.

Lastly, On replacing the pro-lapsed Parts, there must be a due Regard had to the Obliquity of the *Processes*, which are made to pass assant through the *Annuli Muscularum*; and therefore must be repressed towards the Margin of the *Os Ilion* on the hurt Side: Unskillfully to force a Way between the Muscles, would be painful and dangerous; and so would the mistaking a *Tegmen* in the *Inguen* for a *Rupture*.

But to be more particular in the Parts concerned:

113 100

114 100

115 100

116 100

117 100

118 100

119 100

120 100

121 100

122 100

123 100

124 100

125 100

126 100

127 100

128 100

129 100

The Muscles
of the Belly
described.

The *Musculi Abdominis* help to support the *Viscera*, and hinder the Descent of the *Intestines*, through whose *Annuli* they difficultly slide, and are as difficultly returned, as will best be made appear from their Situation.

1. *Musculus Obliquus descendens* is fastened above to the *Costæ nothæ*, and some of the *Costæ verae*, on the hinder Part, to the *Muscles* of the Back, from whence it proceeds on each Side, and comes to the *Linea alba*; beneath to the *Os Ileum*, and Margin of the *Os Pubis*; nigh which its Fibres are opened to make Room for the Passage of the *Spermaticks*.

2. *Musculus Obliquus Ascendens*, lie under the former, a little larger, higher, and more remote from the *Linea Alba*, affording a Passage also to the *Spermaticks*, called *Annulus secundus*.

3. *Musculus Rectus* goes directly from the *Cartilago Ensiformis*, to the *Os Pubis*.

4. *Musculus Pyramidalis*, sometimes one on each Side, and sometimes single, lies under the former, and at the joining of the *Bones*.

5. *Musculus Transversalis* goes from the *Appendices* of the *Vertebrae Lumbares* athwart the Belly; its upper Part is fastened to the *Costæ Nothæ*, the lower to the *Ossa Ischii* and *Pubis*; where, like the *oblique Muscles*, it forms another Ring for the Passage of the *Spermatick Vessels*, larger, higher, and at greater Distance from the Middle of the Belly.

6. *Musculus Cremaster* lies on the Folds of the *Inguen*, according to its Length, and propagates its Fibres to the Testicles, becoming their proper Suspensor.

All these Muscles on the Inside of the *Abdomen*, are covered by the *Peritoneum*, whose Productions, without separating any of its Fibres, are carried also to the *Scrotum*, and are the Parts which primarily suffer in Ruptures.

Peritoneum is a membranous Duplicature, covering and containing all the *Viscera* of the *Abdomen*, thickest from the Navel to the *Os Pubis*, (especially in Women for Distention in Gravidating.) Its internal Surface smooth and unctuous, from a Number of small Glands that bespread it; which in *Hydropick* Bodies grow (as the Membranes do) more large and visible. It is connected on the Outside to the *Musculi Transversales* and *Linea Alba*; below to the *Os Pubis*, on the Sides to the *Ossa Ilii*; behind, to the *Os Sacrum* and *Vertebra Lumbares*: It is also reflected from the inferior Surface of the *Diaphragma* to the convex Surface of the Liver, which it suspends, called *Ligamentum Hepatis Suspensorium*. The exterior Coat hath two Proccesses falling down into the *Scrotum* in Men, and make each *Tunica Vaginalis*; and in Women the *Involucrum* for the *Ligamenta Uteri Rotunda*. Sometimes the not knowing precisely where those Proccesses pass the Perforation of the Muscles, has made Ruptures taken for Tumors of another sort, attempting Suppuration: A. *Parvus* men-

tions a Surgeon, who, on opening an Abscess'd Navel, the Bowels instantly fell out; and cautions others against meddling with such Ruptures, particularly in Children. Dr. *Linacre*, Founder of the College, and Physician to King *Henry VIII.* died with the Breaking of a *Hernia*; and contrarily have been the Occasion of putting Trusses on Apoplexations that should be opened. In morbid Cases great Quantity of Serum hath been found between its Dupliscature, when there hath been none in the Cavity of the *Abdomen*; and is supposed the *trac Tympany*, frequent in Women whose *Ovaria* are probably first affected, and occasioned chiefly by the Pains and Difficulties in Miscarriages, or Child-Births, either when natural, or the Effect of violent Means.

Funiculus Umbilicalis consists of a Vein, two Arteries and the *Urachus*, which soon after the Birth dry into the *Ligamentum Umbilicale*, or Suspensor of the Bladder. The Knots in it are fleshy Membranes, to moderate the Motion of the Blood towards the Infant; and Care should be taken that the Ligature made on it at the Birth, should not be too slack: a Mistake that has been the Occasion of fleshy Excrecences of considerable Bulk, frequent among the Negroes of *Africa*; and, if ever cured, requires a second Ligature, and perhaps *Escharotics*. Nor should it be cut between the Ligature and Child, but without it.

Omentum covers and fluctuates on the Intestines, extends from the Bottom of the Stomach to the Navel, where it commonly ends, or rather a little lower on the left Side; which is the Occasion, that the Lapse of it is generally there, down into the Region of the *Hypogastrium*, and sometimes the *Scrotum*, causing *Hernia Epiploica*: When in Women it happens to slip down between the *Matrix* and Bladder, it makes a Compression on the Orifice of the *Uterus*, and thereby hinders Generation: Its Weight commonly about half a Pound; but in *hydropical* Persons much more. *Fabricius Hildanus* saw one of fifty six Pound.

The *Stomach*, in its natural Site, seems so placed as to be unable to give any Disturbance to the *Hypogastrium*, yet accidentally may contribute much to the Production of *Ruptures*, either as it is pressed downwards by the *Diaphragma* in violent Coughing; or through Intemperance in eating and drinking. For as the *Stomach* may ordinarily hold three or four Pints, so if it be distended beyond that, by voracious and debauched Meals, or by *Flatulencies* from improper Diet, it may thus accidentally help to press the *Intestines* towards the Process of the *Peritonaeum*.

The Intestine
falling.

The Intestine commonly fall-
ling into the *Scrotum*, and causing
a *Hernia Intestinalis*, is the *Ileum*,
being about twenty one Hands
Breadth long, it possesseth almost all the cir-
cumferential Space below the Navel. It is not
fastened to the neighbouring Parts, as the *Colon*
and *Cecum* are, which, for that Reason, fall later
into the *Scrotum* and not till the Rupture is
large.

The *Scrotum*
described.

The *Scrotum* is externally di-
vided by Seam from the *Penis*
to the *Penis*, and has an out-
ward muscular Coat, which con-
tracts it into a Purse, as it were, and an inward
one called *Dartos*, which gives a covering to
both Testicles. Each Testicle besides hath
three Tunics; the *Erythroides* from the *Crem-
aster* Muscle, which suspends it; the *Erythroi-
des*, or *Vaginalis*, from a Production of the *Pe-
rithonium*; and the *Albuginea*, nervous, white,
and thick, which immediately clothes it, and
whereof the Testicle being divested, appears to
be a soft loose Body, composed of several se-
minal Vessels, and many capillary Branches of
Veins, Arteries, Nerves, and Lympheducts,
like a Gland. They have also pertaining to
them, the *Epididymides* and *Vasa Deferentia*.
The former, small round Bodies arising from
one End of the Testicle, and running their
whole Length: Their Use is to receive the
Semen separated in the Testicle, and pour it
into the Trunks of the *Vasa Deferentia*, with
which they are continous.

The

The Uterus is small, but being membranous, very distensible. The Uterus. placed between the Bladder and Rectum, having two broad Ligaments, which from its Bottom are fastened towards the Kidneys, that the Weight of the Fetus do not bear it downwards; and two round Ligaments, which passing with the *Processus Peritonei*, are fastened to the lower Part of *O: Pubis*, and upper Part of the Thighs, to hinder its Ascent, which might disturb Respiration, or the Office of the Stomach. The exterior Parts are obvious, and need no Description.

Swiftness, termed *Ruptura* & *Hernia*, quæ sunt tumores contra naturam, partium quarundam membranacearum, in ventris, prodeunt, situ depravato, i. e. Tumors produced, against the Order of Nature, from the depraved Site of certain membranous Parts of the Abdomen (the Intestines, or *Vimentum*) breaking forth at the Navel, or, what is more common, sliding into the *Inguen*, or *Scrotum*; the former imperfect from a Relaxation of the *Peritonæum*; the latter perfect, and more properly termed a *Ruptura*.

In respect of this Site, they are termed *Omphalocèle*, or *Hernia Umbilicalis*, *Rubopocèle*, or *Hernia Inguinalis*, and *Oschocèle*, or *Hernia Scroti*.

Definition of Ruptures.

The Sorts, in respect to Place.

into the Trunk of the Vasa which they are con-

In Respect to
the Parts
changing.

In Respect of what membra-
nous Part it is, that has thus
changed its Place, (Intestine or
Omentum,) they are termed *In-*
testinalis, or *Epiplocele*, (*Zirba-*
lis.)

In Respect to
the Matter
which in Scro-

And the *Hernia Scroti*, from
the peculiar Matter fixed in it,
may have other Denominations,
Ventosa, *Aquosa*, *Carnosa*, and
Varicosa, (*Pneumatocèle*, *Hydro-*
cèle, *Sarcocèle*, and *Circocèle*;) and sometimes by a Compli-
cation *Hydro-Pneumatocèle*, *Hy-*
dro-Sarcocèle, as well as *Entero-*
pilocele.

The Causes of
Ruptures.

The immediate antecedent
Causes of Ruptures are various;
Omphalocèle and *Bubonocèle* are
from a Rupture or Distention
of the interior Part of the *Peritoneum*; but
when either the *Caul* or *Gut* appear in *Scrota*,
there is not only this interior Rupture, but also
the exterior *Apophysis*, or Process of the *Perito-*
neum, must be relaxed, if not ruptured. A-
gain, in *Hydrocèle* and *Pneumatocèle*, there is
no Occasion for Rupture or Relaxation; for
these proceed from the immoderate Moisture
and Laxity of the *Peritoneum*, as is manifest in
Children.

External Causes are any violent Motion of
the Body; the eager Crying of Children, Disten-
tion of the *Abdomen*, by hard Labour, immo-
derate Ventry, hard Riding, carrying heavy
Burthens, Falls, straining the Voice, hard
Stools,

Stress, Coughing, Sneezing; and even the very Weight of the Viscera in fat Persons, has caused imperfect, and when neglected, perfect Ruptures.

Signs of *Bubonocoele* is a round Tumor in the *Inguen*: It begins from *O. Ischi*, increasing by little and little, and when pressed, does readily go back. If an *Enterocoele* is in *Scroto*, the Tumor seems hard, and when pressed goes back with Noise: If *Epiplocele*, the Tumor will feel soft like Wool, but unequal, and does not go back so easily as the Intestine. Signs of the *Peritonaeum* ruptured, are a sudden Increase of the Tumor with acute Pains: In a Relaxation not so, they are less, and come and vanish together. Windy Meats, and plentiful Meals, increase all these Tumors.

The watry and windy Ruptures increase gradually; but are perpetual, i. e. do not disappear by laying down, nor are to be repositied as the others, and may be thus distinguished: The *Hydrocele*, or watry, is soft and smooth, until the Augmentation of Humour has greatly distended it, and then is transparent by Candle-light: The Tumor may be either seated between the Coats of the Testicle, or included in a proper *Cystis*, judged of chiefly from their Figure. The former assuming that of the Testicle, is oval or oblong; that in the *Cystis*, round. The *Pneumatocoele*, or windy, is much lighter and softer than the other, and makes a kind of Sound when ticked upon. *Sarcocoele* is known by its Unevenness, Hardness, and dark

dark Colour. *Circumscissum* by the Knotting and Dilatation of the Veins. If the *Omphalocoele* be from the *Omentum*, it retains the natural Colour, is almost without Pain, and returns without Noise as soon as the Patient is laid on his Back. If the Tumor be from the Intestine it is more uneven; if superfluous Flesh, it is more difficult to press in; if Wind, it is softer, slipping with Noise under your Finger, without going back; if Water, it is of a darker Colour; and lastly, if the Tumor be from Blood, it is livid like an *Echymosis*.

The general Fault whence proceed the Mischief Ruptures are incident to, is trusting them in their Recency to unskilful People, who, not understanding any Part of Surgery, cannot distinguish Tumors, and so proceed improperly; or else it is from a Negligence in the Parties themselves, who, though well advised, may not follow it.

Children from their violent Crying, the Softness of the *Peritonaeum*, and feeding on crude Milk, are most subject to Ruptures, especially in their earliest Months. If their *Omphalocoele* is caused by the Intestine; *Omentum*, by Wind or Water, it is curable; if from Flesh or Blood, doubtful and difficult. Again, their *Hernia Omentalis* and *Intestinalis* may be cured by proper Means till Puberty; but in Adults, scarcely without Surgery. The two Sorts of *Bubonocoele* are common to Men and Women, though not so frequent with the latter, by reason of the greater Thickness of the *Peritonaeum*. Those in *Scrota* are peculiar to Men, though a Resemblance

blance happens sometimes in the other Sex; for their Ligaments *Uteri* *teretia* pass between the the *Lamina*, as the *Vasa Spermatica* in Males do.

The left *Encercle* is more grievous than the right; because the *Cecum* is always repleat with Excrement, and not fastened to the *Omentum*, but pressed upon by the Tellen Intestines; most dangerous of all, are, when the Gut is doubled and filled with *Feces*; the Patient often in this Case, suffering a Fever and Gangrene, and goes off with *Singultus*.

Sarcocele and *Cirrhocele*, if large, are not safely managed either by Pharmacy or Surgery. When they are recent, and only the Effect of too hastily and quick Purges in *Gonorrhoeas*, they submit to mild and anodyne Topicks; but when confirmed, they take the Nature of a *Scirrhus* on the Testicle, and will be dangerous tampering with, lest they turn cancerous and mortal. *Hydrocele* and *Pneumatocele* are in the Beginning curable by Medicaments; but when the Tumor forms itself large, Surgery is requisite.

Hernia Intestinalis in People of full Growth, are, for the most part capable only of being kept up by good Trusses and Bandage, which Patients must be cautious of neglecting, for grievous Pains succeed their dilate, Cholick and Fever; and sometimes when the Excretion of the *Feces* are stopped, there follows vomiting, and an Inflammation of the Gut, a *Singultus*, and Death. Yet it may be observed, when the Disruption of the

Peri-

Peritoneum is large, a Tumor in *Scroto* may be produced as big as one's Head, without much Danger or Pain. This is obvious to any one, in the Objects of this Sort that present in the Streets, who have as free a Passage, no doubt, through the prolapsed Intestines, as if they were *Intra Peritoneum Abdominis*.

Hernia Omentalis is difficultly reduced and retained, yet less so in Persons of a humid, than dry Habit; in the *Inguen*, than the *Scroto*; it will be most hard when any Excoriation from rough Handling, has been the Occasion of generating some intervening viscid Substance to hold it fast.

In general, we should prescribe
 The Cure. a Diet, warm, drying, and of good Nourishment, as Mutton, Veal, Lamb, Pullet, and the like, keeping their Bodies ^{or} loose by this, or purging; avoiding at the same Time, all Herbage, Fruit, Fish, and Milk Meats, with what else are supposed to engender Crudities. Their Drink a red Wine with Water, wherein if Steel or Iron be quenched, it is better; a *Chalybeate* Mineral Water, or a medicated Ale; if a Cough obtrude, the proper Remedies must be administered, and all Intemperance and Excess must be forbid, whether it relate to Eating and Drinking; or to Exercise, as Walking, Running, Leaping, Riding, Coughing, Sneezing, and inordinate Laughter: Consequently, Rest, and an easy Position, must be obtained as far as possible, and Freedom from Passion, and every Disturbance

hance of the Mind. This is so necessary, that perfect Cures have been wrought by Sicknesſes that have confined Patients to their Bed.

So much may ſuffice for a general Demeanor herein: The particular Cure comes under three Intentions.

The firſt, is a due Repoſition of the prolapsed Part into the proper Place; effected by ſoftening and diſcharging the Excrements, by laying the Patient on his Back with his Buttocks raiſed; and then with fomenting warm Cloaths, and gently repreſſing it with your Hands; if it does not ſubmit, Mr. *Wiſeman* adviſes, the putting him on the Back of a ſtrong Man, with his Head downwards; but take care not to bruife, for fear of a Gangrene.

The ſecond, is to keep it right when it is reduced; done by proper Bandage and Truſſes.

The third, is to give a Contraction to the relaxed Parts; done by the Cold Bath; by aſtringent Fomentations, Cataplaſms, and Emplaſters.

The Cold Bath, as it has proved of infinite Service in many Diſtempers, invigorating both Mind and Body; ſo it will be particularly uſeful here in the relaxed, weak, and paralytick State of the containing Parts, provided due Regard be had to Age, Strength, and Time of Continuance in it.

Cold Bath of Service in Ruptures.

Aſtringent and agglutinative Simples are, *Rad. Biſſort. Sympſiti. Tormentill. Osmund. Regal. Fol. Fragar. Millefol. Pentaphyll. Prunell. Tapſi*

Tappi Barbati, Equiset. Bais. Pastor. Plantag. Samol. Cort. Querc. Granator. Flor. Rosar. Balanst. Noces Cypress. Lap. Hematit. Terr. Sigillat. Bolus Verus, Acetum, Oxycratum, Vinum rubrum, Aq. Fabror. G. Arabic. Agnoscias. Tragacanth. Opoponac. Mastich. Thus, Alac. Sarcocent. Labthyerol. Terebinth. Gypsum. Farina Amylum, Herniurium, Sang. Drac.

These may be variously used in Fomentations, Baths, Cataplasms, or Emplaisters: Your Emplaister; whether it be any Composition from these, or the *Ad Herniam* of the Dispensatory, should after Fomentation be applied with Compress and Truss; and left on for a Month, without removing.

Internally is recommended, *Troch. de terra Lemniacum Carabe ʒj. in haustulo Vini albi. Succ. Sympbiti, vel tappi barbar. ʒij. (vel Pul. Sigill. Solomonis ʒi.) in Vin. alb. sumend. Rad. Sigill. Solomon. Sympbit. maj. Sem. Anisi a. ʒj. F. Pulvis ad herniam detur Infantibus ter in die ad gr. xv. Adultis ʒij. superbib. Decoct. Millefol. vel Sympbit. haustum.* Father Cabriere's Secret was, *Sp. Salis bene rectificat. ʒij. in vino Clareto ʒij. de quo sumat haustulum (jejuno stomacho) pro tribus septimanis;* and the following Emplaister:

R. Pul. Mastich. ʒi. Labdan. ʒij. Noces Cypress. No 19. Hypocis. ʒj. Pul. Rad. consolid. maj. ʒi. Picis nigra ʒij. Tereb. Ven. ʒj. M. F. Empl.

Vigerius recommends *Consol. ras. rub. Rad. Sympbit. a. ʒj. are Cydoniata Condit. ʒi. G. Tragacanth. Terr. Sigillat. Corall. rub. Pul.*

*Pul. Herniarie a. ʒi. Croc. Mart. Astring.
Magnet. a. ʒi. cum facchar. rosar. ʒi. Condita
vel addito syr. de rosis siccis, cuius capiat
ʒij. Augulis Auroris superbib. hanc. Vini.
℞ Conser. rosar. rub. Absynth. a. ʒj. Species
Diarrhod. Abbat. ʒij. M. F. Conditum.*

As Ruptures differ not only in the Part falling, but also according to the Place it falls to, and the Matter it consists of; so it is evident besides general curative Intentions, there is required some Variety of Method peculiar to each.

How to reduce Ruptures.

First, *Hernia Umbilicalis*. *And, First,*
brose Pareus directs the Patient to be laid on his Back, and with *Hern. Umbilic.*
Fomentations to repress the Caul, or Gut, with the Fingers: If it should not yield to this through its Largeness, or other Circumstance, then to take up the Skin round the Tumor; and having brought it between your Fingers, to make a strait Ligature on it with a Needle and Thread; to scarify the circumjacent Parts, and cut off what is without-side the Ligature. To this, if we add a quiet Posture and Regimen till a *Cicatrix* is formed, it is probable the muscular containing Part may contract, so as to keep the Internals restored. Mr. Wiseman, and others, for the larger Ruptures of the Navel, do, after Reduction, use a Bracer to lace on the whole Belly; under which a Bolster may be placed, of proper Dimensions, on the Navel, and under that an Emplaster *ad Herniam*. If the Skin should mortify through Neglect, Stitch, says he, the *Peritonæum per Gastroephiam*. Though others, as *Fabricius ab Aquapendente*,

pendente, will scarce allow the *Peritonaeum* to be ruptured in *Hernia Omentalis*.

The Intestinal Rupture is more frequent than the former, and of worse Consequence. In order to Reduction, the Patient should be placed on his Back, with the

Buttocks raised higher than the Head; then with warm Cloaths and Fomentations endeavour gently to repress; and that Part first which came out last, whether it be in *Scroto*, a *Procidenteria*, or an *Exomphalos*, being very careful against rough Measures, which sometimes produce Inflammation and Gangreen.

and preserving them, when so reduced.

In Children, the Impediments to Reduction, by the Softness of their Constitution, are easily superseded; an astringent Fomentation, a convenient Compress and Bandage, using all careful Means against crying and coughing, and resting the Child for some Days, (if possible on his Back,) will generally bid fair for a Cure. But in Adults, the Case is altered: Violent Pain, Inflammation, and sometimes a speedy Death ensuing; and this never more frequently, than from a Plenty and Induration of the Excrements, the common Incentive of all those Symptoms, we denominate under the *Iliack Passion*, (a Distemper arising from an Inversion of the *peristaltick* Motion, and not any pretended doubling, twisting, or Inversion of the Gut itself;) for if a Stop be made in the Passage, whether by such Induration I have been speaking of, or a sudden Fluxion

of Humours inflaming any Part of the Gut, (and especially when displaced,) what must the Consequence be but acute Pain, a Return of every Thing upwards, *Languors* and *Syncopes*? For relieving these, and softening the indurated Excrements, Embrocations of emollient Oils may precede, and then carminative Clysters, Emolumentations, and Cataplasms, renewing them often,

Rx Ol. Lillior. rosar. a. p. a. A Clyster of *Vini Canariensis cum Oleo Nucis.* Or,

*Rx Albee. Malv. Fol. Origan. Catamenib. Sum-
mit. w. Anisi. a. Mj. Sem. Anisi ʒij. Flor.
Cham. Melilot. Sand. & p. 2. F. Decoctio ad
ʒij. in qua dissolve Diaphen. ʒj. pro duo-
bus Clysteribus.*

*Eodem decocto cum vino foveatur pars tume-
facta, ex facibus, seu Magmate F. Cata-
plasma. Addendo farin. Lini. fenugrec.
Axung. Porcin. & Butyri recent.*

*Rx Rad. Althe Lilior. a. ʒij. Sem. lini fe-
nugrec. a. ʒij. Fol. Malv. Violar. Pariet-
ar. a. Mj. Coquantur in Aq. commun.
postea tundantur & trojiciantur per seta-
cem addendo Butirum sine sale. Ol. Lillior.
q. s. Fiat Cataplasma calide Scroto & Re-
gioni Hypogastrii applicand.*

If the Clysters come off without Effect, and the same Means already mentioned are ineffectual to Reduction, it is a Practice to enlarge the Rings of the Muscles (where the Stoppage usually is) by Incision, which need not extend to the Scrotum, unless the prolapsed Parts adhere there; not even when the Pain and Induration are.

are observed to increase, and the Danger more imminent. Authors go farther, and prescribe the *Punctum Aureum*, as some others have done an actual Cantery, or *Cauterium Medicamentum*, to compleat a Cure.

The *Punctum Aureum*, being neither very common or safe, should be undertaken only in extreme Cases, and at the Importunity of the Patient. A ingenious Author thus describes it: You are to make, says he, your Incision on the *Or Pubis*, so that you may pass a Director under the Process of the *Peritonæum*, according to its Rectitude: Then having raised it up, separate it from the Fibres and nervous Bodies, to which it adheres, being particularly careful in removing the *Vasa Spermatica* and *Cremaster Muscle*, without hurting them. That done, take hold of so much of the Process as is now loose, with a Pair of Forceps and pass it through with a Needle and Thread five or six Times double, as close to the *Spermaticks* and *Cremaster Muscle* as may be done, without molesting them. Lastly, pass through the Middle of that Part of the Process, which remains without your Forceps, and take up the Lips of the Wound together with it, draw a strict Knot, and leave the Ends hanging out at the Wound, till they drop off themselves, and that is agglutinated. *Non temere (says Celsus) nec nimis cito, ad Sectionem veniendum, quia sepe præter Spem Fletum curatur.*

Of Ruptures.

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To check the Inflammation that may arise on this Operation, the Tumor should be moisten'd with Oxyerat. ex. *Ag. La. Nuc. Coccleas.* vi. *Acetum ros. Coch. 1.* and lay on the *Ceratum Galbani. viz.*

R. Cera Alb. 3ij. Ol. Rosar. Ompbacin. 3ijj. Conquassentur cum modico clari & albi aceti in q. Ceratum.

Tho' Ruptures are properly of the Intestine or Omentum, (and perfect only when in *Scroto*,) yet there are four other Tumors in this Part, which from a Resemblance have obtained the Name of *Hernie*. The *Ventosa* and *Aquasa* are two of Affinity with each other, and shall be considered with some Distinction.

Pneumatocole peculiar to the Scrotum.

The *Ventosa* is most frequent in Children; of sudden Growth, round, and affecting different Parts of the *Abdomen*, but chiefly the Testicle, being contained within the *Tunica Vaginalis*, and in such Case approaches towards the Shape of it.

The windy Rupture.

They are generally of easy Cure, it consisting in discutient Fomentations, gentle Laxatives, avoiding all Things flatulent, an *Empl. e Cyano. vel e Baccis lauri*, and a Bag-Trust. This only is to be observed, that when the Tumor is very tense, your Compression and Bandage should be less strait, for fear of exciting Pain and Inflammation,

R. Flor.

℞ Flor. rosar. r. Hypericum. Cham. al. Myrt.
Cort. Granat. (vel. quera.) Gallar. Nucis
Cypressi a ʒj. coquantur in Aq. Favr. vel
Calcis liv. ad medietatem Adde. s. ad fin.
Alum. roch. ʒij. S. ʒ. ʒiv. F. Form.

℞ Stenoc. ovilis q. v. Coque in
lacte Vaccin. q. r. Et Cola. Val-
let (says Fuller) cum intestin.
flatu dissentium, aut in puratis fecibus insar-
ctum vix reduci potest.

℞ Fol. Verbasci Althe Flor. Cham. rosar.
rub. a ʒij. Farina fabarum, Orobb. sem.
Dauci. Cymini, Carui a ʒj. Bacc. Juniper.
Lauri a ʒij. Summis. Ruta Origani. a ʒij.
M. j. F. omnium Pulvis, Et cum Dativo
vino rubro. F. Cataplasma.

℞ Empl. Diachyl. cum Gum. Tragacanth. Cy-
mini. a ʒj. liquatis adde. Terebinth. Cypri.
ʒl. Ol. Hyper. ʒij. Pul. Rad. Inid. ʒij.
Argent. viv. Axung. Borcin. a ʒij. M. F.
Empl. Scroto Adultorum Applicandum.

It is always supposed, after the Use of Po-
mentations, that a Stupe wrung from it, an Em-
plaister, or a Cataplasim be retained on with a
warm Bag-Truss, and the Person recommended
to a quiet Posture, and regular Course of Life
inwardly.

℞ Aq. Carnat. vel Chamem. Comp. ʒiv. ʒj.
Cymini ʒij. Juniper. ʒiv. Essent. Cort.
Aurant. Citri. a ʒj. Essent. Opii. ʒj. Ol.
Puleg. ʒij. M. hujus detur ʒij. in
Vehiculo p. valeat etiam in passione Colica,
Hysterica, Et torminis Intestinorum.

The

The *Hernia Aquosa* is an hydropical Tumor, possessing, or The watry contained between the Membranes of the Scrotum or Testicle, or both; generally *Anasarca*, i. e. bred *ab extra*, from a Poverty of the Blood; whence its Cavity is loose and watry, emitting the Serosity, in a Part weakened by some precedent Irregularities; and that it is thus, and not from any Issue of Water out of one Cavity into the other, is plain from our Observations on dropical People; who, although the Tumors be very large, yet if the inner Membrane of the *Peritonaeum* continues whole, let not any Water downwards. And also that this Tumor frequently arises here, when no Part of the Body else appears Hydropical.

The beginning Tumor, and in young People, is very likely to resolve and dissipate, with Bleeding, Purges, a Bag-Truss, an assiduous Use of discutient Fomentations, Cataplasms, and a good Regimen.

The Fomentation may be made, *Ex floribus Balauft. Rosar. Nuces Cupressi, &c.*

℞ Sem. Cymini Anis. a ʒij. Alum. roch. ʒj. Cort. Querc. Granat. a ʒj. Coq. in vin. rub. & Aq. Fabror. a ℥i. Fiat Fotus op. Pan- norum applicand.

The Cataplasim. *Ex farinis Hord. fabar, &c.*

℞ Fol. Hyosciam. Cicutæ fol. Malvæ Flor. Cham. a Mj. Rad. Bryon. Lillior. a ʒiv. sem. lini fenugræc. a ʒij. coquantur in brodio ex Cepit. ovinis F. Fotus.

Ex

*Ex Facibus Fiat Cataplasma cum Medul.
Pan. tritic. Malt. Commun. & Amalg.
Or instead of these, the Prescriptions under
the Head of Hernia Ventosa.*

Cataplasms, I take it, are most effectual for resolving these incipient Tumors; because the *Membrana adiposa*, being wanting in *Scrota*, the Coldness of the Part is a sufficient Check to Diffipation; nor can that Impediment be overcome by Application less retentive, or less communicable of Heat, than they are.

They will be of greater Estimation in the increased Tumor, whenever it shall be thought necessary to give a Vent by Blister, or a superficial Seton, especially the last; (which is urged as a preferable Practice, when the *Hypogastrium* is *anasarcous*; because the copious Discharge it makes, keeps off a Load from the vital Parts;) for opening such cold Tumors, and in such cold membranous Parts, will ever give great Jealousy of an Extinction of Heat; which no Applications, whatever are more likely to conserve, than Cataplasms.

But when the Tumor is so increased, as to want external Operation to discharge the Contents of it, Incision, by Lancet or Knife, is the common and approved Practice: Causticks are less eligible; because, as I observed, the fatty Membrane is wanting.

The *Prerequisites* to this may be *First*, in respect to Time; that is properest for Apertion in Adults; when the Tumor is judged to contain upwards of a Pint of Water; less may make you fearful of hurting the Testicle; and a very large Quantity (for I have heard of seven Pints, and more, being let out in a Day) hazards more imminently the Mortification, by the Lapse and greater Flaccidity of the Membranes on its Discharge. *Secondly*, It may be observed, that one Puncture is sufficient, when the Water is without the Testicle, or contained in a *Cystis*; but a double Opening will be required, should there be any Water contained within the *Tunica Vaginalis* of each. *Thirdly*, You are immediately after Opening to thrust in the *Canula*; for when the *Scrotum* is as yet distended, the Membranes composing it answer to one another in the Orifice; which will not so easily be when flaccid, nor so promotive of the Discharge. *Fourthly*, It may be considered, That if a Flux of Blood should happen from wounding some small Vessels in the Puncture, the *Canula* should be withdrawn, and Compresses spread (to restrain it) with Wheaten Meal beat up with the Whites of Eggs. But herein be not too credulous; for a very small Matter of Red gives Tincture to the *Serum* in this Operation. *Lastly*, Chuse a depending Part, (not on the Seam,) and then steadying the Whole, thrust your Lancet in, and make an Orifice of a fit Capacity to receive the *Canula*, which ought immediately to follow, and be continued there until the Water is all drawn off;

off; most conveniently done at once; unless the Quantity be very large, and the Patient in any weak or ill Plight of Health; and then it is better at two or three Times in the same Day.

The Dressing need be no more than a Pledget spread with some Digestive, an *Empl. e Bolo*, a *Cataplasma. ex farinis*, and a Bag-Truss, fomenting at each subsequent Dressing. The Orifice soon heals; and then it would be necessary to add a Purge or two, and prescribe a dry Dieting and Course of Bath-Waters; for even under the most cautionary Methods, they frequently fill again in a Year or two.

Fabricius Hildanus, on this Head, says, the *Hernia Aquosa* is sometimes Complicate, *i. e.* sometimes the Intestines, and sometimes a *Sarcocoele* intermixes; Flesh growing, and hardening, through want of Heat, to the Testicles, and their Tunics to a great Bigness; advising from the cancerous Nature of these latter Tumors to extirpate, unless the Root extend to the Process, or is communicable with any Part of the *Abdomen*, which then to do, he says, would be mortal; and gives an Instance wherein he attempted by Incision to discharge the Serosities in the distended *Scrotum*, of such a complicate *Sarcocoele*; and the Consequence was an Increase of the Pain, Inflammation, and cancerous Malignity. His Advice is not so judicious in another Place, where he talks of long thick Tents, and continued for the Space of two Months in one of these watry Tumors he had opened, contained within the *Tunica Erythroides*.

The

The two other Tumors peculiar to the *Scrotum*, are the *Sarcocoele*, or *Hernia Carnosa*, and the *Circocoele*, or *Hernia Varicosa*, of some Affinity also, as having probably the same Original :

The two other Tumors peculiar to the *Scrotum*.

But I shall chuse to distinguish them by the one being a gelatinous Humor, or *Fungus*, that over-spreads the Testicle, and commonly takes its Rise from some external Bruise: The other, a Distention of the seminal Vessels, and as commonly arising from the indiscreet stopping of a virulent *Gonorrhœa*.

In the Beginning they are both curable; the former, by discutient Fomentations. *Riverius*

The Prognostick upon them

says, he cured one to the Bigness of his Head, with the following Cataplasm:

Rx Farin. Hord. & fabar. sem. Cymini flor. Cham. Melilot. & rosar. Pulsat. cum Oxymel. coquantur ad Cataplasma.

The other termed at first *Hernia Venerœa*, frequently resolves, by forcing the Running again through the *Penis*, or failing there, disperses by Salivation: But as Negligence in the Patient, or want of Skill in the Surgeon, may lose the Opportunities of retrieving Mistakes, these Tumors frequently harden into the Nature of a *Scirrhus*, uneven under very imperfect Degrees of Sensation, adhere firmly to the Membranes of the Testicle, or Testicles, and is then the confirmed and true *Sarcocoele*; incurable but with Extirpation; and admitting only of such palliative Chirurgical Help as will con-

duce

duce to mitigate Uneasiness, hinder the farther Growth, or qualify other untoward Circumstances to the Patient's Conveniency, as may from Time to Time occur.

Fabric. Hildan, having given four several Instances of the *Sarcocoele* (Cent. IV.) in the Right Testicle, says, they have all the Nature of a *Scirrhus*, and that he never met with more than one in the Left; and that proved cancerous and mortal.

In the *Sarcocoele*, we repeat *Sarcocoele*, the Bleedings, gentle Purges, try an Means to be Issue on the Inside the Thigh, taken with it. emollient Embrocations and Fomentations, a warm Stupe wrung out of *Sp. Vini*, or an Emplaister.

R. Emp. Vigonis cum Mercurio quadruplo ℥ij. Diachyl. Ireat. ℥iij. Gum. Ammoniac. solut. in succis Hyosciam. & Cicuta ℥j. Pul. subtilis Rad. Scrophular. Gladiol. a. ℥ss. Camphor. 3j. Ol. Catellor. q. s. F. Emp. continuo gestandum cum fascia.

Internally, medicated Ales from *Sassaphras*, *Sarsap. Scrophular. Salvia, Mentha, Lig. Juniper. Guaiacum, China, Santal.* and the like; giving every Morning *Pul. Rad. Ononid. 3j. in hausto Vini Amari.*

If the Tumor doth not tend to Suppuration, or the Patient cachochymious, Chalybeats, Mercurials, Mineral Waters, and the following *Suffitus* may contribute towards the Dispersion and Waste of it.

R. Thuris Mastich. Sandarach. a. 3j. Colophon. 3ij. Styrac. Calam. Benzoin a. 3℥. Camphor.

Campbor. ʒj. Cinnabar. ʒiſ. Antimon. Crud. ʒiiij. F. Alcohol. & cum Tereb. q. ſ. fiant Trochiſchi pondere ʒij. vel ʒiiij. ſumus excipiat in ſella perforata bis in die, Cavendo ne quid exhalet.

But the longer the *Sarcocoele* has continued, the unſafe it will be to make tryal of other than the mildeſt Palliatives, leſt we renew the Diſorders that firſt gave Riſe to it; for if Pain and a new Fluxion ſhould ſeiſe the Part, it almoſt infallibly mortifies; and then nothing remains but Extirpation; which cannot have the deſired Succeſs, if the Tumor have any Communication with the Parts within the *Abdomen*.

Extirpation of a Teſticle.

To perform the Operation, (attempted only when the Whole Subſtance with the Teſticle may be clear removed,) you are to make Inciſion to the Tumor, and extend it above the affected Teſticle, that ſo a Needle with ſtrong Thread may be paſſed conveniently through the Proceſs, a firſt and ſecond Time for Ligation: When clearing the Teſticle from the *Scrotum*, you may bring that, or the Veſſels, and Part of the Proceſs without the Ligature away, leaving the Ends of the Thread out to digeſt off. The Dreſſing may be an Egg, or two, beat up with Roſe-Water, and a little *Pulvis aſtringens*, or warm *Ol. Tereb.* a thick Compreſs ſpread with Cataplaſm, and a proper Bandage. Internally, gentle Purges of Manna and Caſſia, and a medicated Ale, or *Hydromel*.

Circocoele,
Means used
with it.

I should take no further notice of the *Circocoele*, whose Intentions of Cure are equally comprehended in the former; only for this Peculiarity by some, that they are what *Varices* are in other Parts of the Body; a *Distention of the Vessels from feculent Blood*, and propose Incision, Ligatures, and opening the *varicous Vessel* as in other Places; *Si aliqua vasa testem Nutrientia fuerint facta Varicosa, ea solum modo resecanda & seperanda teste reposita*: But this Destitution of Vessels probably withers the Testicle, though the Operation be easy and successful in the *Scrotum*: But when the *Circocoele* is allowed to be a Tumor affecting the seminal Vessels, then it cannot be done without the the greatest Danger; at least, such Attempt must prove of worse Portent and Consequence, than the resting satisfy'd with Palliatives, Diet, repeated Purging, Venesection, astringent Topicks, to repel the influent Humour, proper Trusses, and Bandage.

OBSERVATIONS.

Blegni tells you of a Person labouring under an Abscess in *Inguen*, attended with great Putrefaction, and that a Portion of the *Ilium*, four Inches long, suppurated; and although the Excrement came that Way, and the Patient sixty Years of Age, was cured. Of another, which was a compleat *Enterocoele*, not to be reduced; but the Matter in the Intestine was brought to Suppuration with the Production of the *Peritonaeum*, even in the Intestine itself; the
Extremity

Extremity of the last agglutinating, to the Circumference of the Aperture of the Abscess, and so could not be closed by Suture. Some again, have had three *Hernia*, viz. of the Navel, and one in each Groin.

Fabricius mentions a monstrous *Exomphalos* in a Woman of fifty Years of Age. In another, a ruptured Navel; at which came forth Part of the Intestines, as well as *Omentum*, occasion'd by difficult Labour.

A Gentleman of seventy-three Years of Age, who, for thirty-five of it last past, had felt a Tumor in the Right *Inguen*, gradually increasing to the Bigness of a Pigeon's Egg, without any great Pain; and that twenty Years after the Appearance of the first, came another Tumor in the Left Groin, soon exceeding the other in Largeness, and by the Increase of both, the *Bubonocoele* came to an *Enterocoele*, with a great Tumor of the *Scrotum*: He notes, that on the Right Side could be repressed by the Hand, the other not: On which he argues, the former must be intestinal, or omental; though by so long Continuance, and often Reduction, some Tumor were still left from the frequent stretching of the Parts; and that the other on the Left Side, which would not be repressed, must be one of those peculiar to the *Scrotum*, (*Aquosa*, he thinks,) and observes, from such a *Hernia*, that strict Ligature, or Bagging up, is hurtful; and also that the Weight of the Water, by Means of the *Musculi recti*, inserted at the *Sternum*, and Cartilages of the *Costæ Nothæ*, will sometimes effect a Straitness of Breathing.

In another Place, he gives an Account of an *Enterocoele*, from a Dilaceration of the *Peritonaeum*, and the Gentleman being negligent of his Truss, in riding, it slid down and became very troublesome, with Inflammation and great Pain through the *Abdomen*, as well as Rupture.

"The Intestine, says he, was now in *Scroto*,
 "stuffed with Excrement; Clysters he threw
 "up at his Mouth, and the Symptoms increa-
 "sed with greater Severity; till emollient Ca-
 "taplasms having laid an Hour or two, and
 "the Patient in a quiet Posture, it submitted
 "to a gentle Handling, and was returned:
 "Broths and composing Draughts fitted him
 "for the Use of the Truss again."

A Woman also troubled with grievous Tor-
 sions in the Belly and Stomach, with Vomit-
 ings, Watchings, &c. throwing up all Clysters
 at her Mouth: On Enquiry, it was found that
 some Months before, she had a Tumor in *In-
 guen*; which in six Days increased to the Big-
 ness of both Pits, and was a Rupture of the
Peritonaeum, through which the Intestines with
 their Excrement had fell, not to be easily re-
 turned. In order to it, he fomented with a
 Decoction of Mallows, Chamomile, Linseed,
 &c. making up the *Feces* and some Sheeps
 Dung into a Cataplasm, and renewing it on the
 Part every Hour for a whole Night; which so
 suppld them, that in the Morning the Gut was
 repressed, the Excrement came off with a Cly-
 ster, and she recovered.

Another, on a Strain, felt the *Hypogastrium*
 crack, and the Intestines to slide into the *Sero-
 tum*; which not being able to reduce, threw
 him

him into an illack Passion, and next Day was troubled with continual Eructations and Vomiting, Costive, and his Urine passed with great Difficulty: The Symptoms increasing, and Clysters being thrown up at his Mouth, with much Bile and Excrement, gave little Hopes of his Recovery, dying on the fourth Day. On opening his Body, the Ileon was found in *Scroto* livid, and in the Beginning of the Process, above the *Os Pubis*, was found a spongy *Fungus* involving the Intestine, and adhering to the Membranes, which he judges arise from the Blood effused at the first Day's Hurt.

He gives likewise an Account of a Cooper's Wife, who, helping her Husband in his Trade, received a Blow in her left Inguen, by which the *Peritonæum* was ruptured: She had a large Tumor there, increasing so fast, it could not be retained within the *Abdomen*; and being with Child, the *Uterus* was distended, and therefore with the Skin of the left Inguen so stretched, the Child might be felt pendulous. However, she went her due Time; but the Child had a *Cæsarian* Birth, which the Mother was in a fair Way of recovering, till being seized with a *Syncope*, rather for Want of necessary Supports, than any Thing else, died suddenly.

All other Authors on this Subject frequently abound with such like Cases: Ruptures, that not being timely reduced, or neglected, have fell into the *Scrotum*, where the Excrements hardening, Gripes and Iliack Passion have followed, or an Inflammation, Vomiting, Suppression of Urine, Watchings, Singultus, Languors, Death.

*Uteri & Ani
Prolapsus.*

In a Chapter of *Ruptures*, I could not pass by those of the *Uterus* and *Rectum*, which I think may more properly be called *Hernia*, than either of the four last Tumors in *Scroto*.

The *Prolapsus Uteri* take their Rise from hard Labour, Indiscretion of a Midwife, or Weakness of the Woman from an immoderate Flux of the *Menses*, Humidity, relaxing the Parts, or, lastly, from rough Handling; but in all these Cases, the Hurt may extend no farther than the inner Membrane of the *Vagina*; what is commonly reputed a falling of the Womb, being nothing more than a Relaxation and Extension of that Membrane.

In order to Reduction and
The Cure. Cure, bleed and empty the Bladder, and *Intestinum rectum* by a

Clister; then place the Patient on her Back, with the Hips raised, as in other Ruptures, and with warm Cloaths, or Stupes out of warm Wine and Water, (or other Fomentation,) endeavour by gentle Pressings to restore it: If too deep for your Fingers, it may not be amiss to use a Stick, armed with Linnen, of a proper Size.

When the Womb is replaced, nothing better contributes to the Retention of it, and recovering the Laxity of the Parts, than keeping the Woman in Bed on her Back, (if possible,) and, quiet, her Legs a cross and raised: And when a Flowing of the *Lochia*, or *Menses*, do not forbid, use the following astringent Injection,

tion, and a Sponge wrung out of the same, to keep in *uteri Vagina*.

Rx Rad. tormentill. cort. Querc. a ʒi. Absynth. Salviae Menthae a Mij. Flores Rosar. balauſtior. a Mj. Alum. uſt. Sulphur. a ʒij. Coque in Aq. Fabror. Cong. Colatura adde Vini Clareti ℥ij.

If these Tumors have been of considerable standing, and, through the Indisposition and Weakness of the Woman, are easily apt to pro-lapse, she then requires to be put under a Course of *Decoct. Guaici Sarsae. &c.* and to adhere to a long continued Use of a Pessary.

Fabricius Hildanus orders them of Cork, ovally or spherically Pessaries shaped, and to be spread with the following.

Rx Cerae novae ʒijj. Colophon. G. Elem. a ʒj. Tereb. ʒiv. Pul. rosar. r. Myrtillor. Balauſt. Rad. Consolid. Maj. a ʒj. Mastich. Oliban. a ʒi. Misceantur cum Oleo rosar. q.s. F. ceratum.
Or, *Rx Fol. Plantag. salic. Mespilor, querc. prunor. sylvestr. summit. rubi. rosar. a Mj. Rad. tormentill. bistort. symphit. a ʒj. Balauſt. nuces Cupressi. a ʒi. sem. anisi ʒiſ. incidantur & contundantur omnia crasso modo pro Sacculo intertexto.* Or a rolled Piece of Flannel of the like Figure, and covered with Cotton and Silk, dipped in some astringent Decoction, and kept on with a Compress and the T Bandage.

Prolapsus Ani.

A *Prolapsus Ani* is what we meet with frequently, and is more troublesome than dangerous; it proceeds from hard Straining at Stool, Laxity of the *Sphincter*, too much Serosity in the intestinal Glands, or Fluxes of the Bowels, where the Acrimony, as well as Moisture disposes towards it, and oftentimes is a Consequence of the Hemorrhoids.

Prognostick.

The longer the Intestine has been down, the less able it is to contract, (or be reduced,) the external Cold weakening that Property, and tumifying the rugous Coat of the Intestine, then thrust outwards.

Reduction.

Reduction may be obtained after the same Manner as the *Uterus*, viz. by a Clyster, warm Stupes, or Spunges wrung out of an astringent Fomentation, Forge-Water, or Claret heated; but when the Cause is from a *Diarrhea*, a *Dysentery*, or the *Hemorrhoids*, respect must be had to those Distempers, before these external Means can effectually prevail.



C H A P. VI.

On the Venereal Disease; wherein is considered the late Dispute between Dr. Dover and his Opponents, concerning the Use of Crude Mercury.

THOSE who fetch the Original of this Distemper no farther back than the Siege of Naples, by the French, 1494. thence calling it the *French*, and sometimes the *Neapolitan* Disease, must only mean that it received its present Name there; that it became more common, or that luckily about that Time some Remedy was found better adapted to its Cure than any before known: For no doubt it reaches the Antiquity of the first Ages, as antient as corrupted Nature, it being irrational, either to suppose a World drowned for their Sins, Strangers to the Vice that contracts it, or that their Wickedness any more than ours deserved Exemption. No; Providence, we may safely believe, stamped an immediate

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mediate Punishment on this, as in all other Intemperance and Sin, *ab Origine*, that the Pains and Sufferings succeeding a vicious Course of Life, might, if nothing else would, restrain us to Virtue, and be both a natural and moral Good to us. We find *Moses*, describing a Leprosy, *Levit.* 13, 14 that corresponds with the Symptoms; and seems to have been a Species of this Distemper; so does the Difficulty of the Cure, *Deut.* 28. where it is said, *The Botch and Scab of Egypt, of which thou canst not be healed*, and those many Laws found here relating to a *Leprosy*, would suffer a greater Disappointment than seems intended, as well from the Obstinacy, as Infrequency of the Distemper, if applied only to what we now strictly understand by that Term: The same may be said of many ancient physical Authors, who, with the like or greater Plainness, have described the Symptoms, though not under the modern Titles.

In the Prosecution of this Subject, I propose to set forth the Nature and Manner of Infection, in all those Symptoms commonly understood by a Clap, *viz.* the *Gonorrhœa*, *Chancres*, *Phymosis*, &c. and then exhibit a Method of Cure; mentioning the Symptoms occasionally under either Head, as they serve to enlighten each other. And, first,

Clap Symptoms.

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The *Gonorrhœa* is benign or malignant: The first Sort is an Emission of Humour, from the *Gonorrhœa* two Sorts.

Glandula prostata, a Weakness only, - and commonly proceeding from great Strains, and where the natural Strength has been too far exerted in any sort, whether by Labour or Venereal Pleasures; it has its Symptoms, as well as Process of Cure very different from the malignant, which is the present Subject of my Enquiry, and that under two Heads.

First, *By shewing how either Sex becomes infected.*

Secondly, *A Cure for that Infection.*

And, 1. The Woman I look on must be primarily and originally infected, that is, *sine amplexu infecto*, to introduce the being of this Distemper in the World: For let a Man correspond with what Variety he pleases. (provided they are sound,) he receives no Malignancy; which could it be so with her, I cannot see why we ever should thus unhappily have had its Knowledge: But Experience too fatally contradicting this, is a Conviction, that Coition with Numbers has first of all, and probably does still, at sometimes effect the same, as at other Times Communication with an infected Person. And this I shall endeavour to make out in a few Words.

Such who say the promiscuous Mixture of different Sperms excites a Ferment, which in a little Time, throws off such an Exspuration, as we call a Running, do agree that Numbers (though sound) carry Infection; we only differ in

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in the Manner they accomplish it, which I rather suppose to be thus: When the Venereal Appetite is jaded with the too intemperate Efforts of several Men, it will be next to impossible for those Parts to suffer the continued Frictions made there, (as common Women do,) without excoriating and fretting the Membranes of the *Vagina*; and such Excoriations, how small soever in the Beginning, meeting with an ill Habit of Body, together with the natural Incalescence and Moisture of the Parts, will soon degenerate to an Ulcer; which Ulcer will be the Distemper. And perhaps herein lies the Difference between the *Fluor Albus* and *Gonorrhoea*, (when thus contracted,) that the one is a Weakness from too frequent Irritations made there, and the other, besides that extrinsical Accident, has an ill Habit of Body joined that induces Intemperies.

What I think gives Credit to this Opinion, is the Customs of the *Jewish*, *Mahometan*, and many Eastern and Southern Countries, who allow a Plurality of Wives, and an unlimited Number of Concubines, restraining the female Sex, at the same Time, to one: For this, tho' an inferiour Motive of the Law, argues the World to have previously experienced such a Liberty in them more destructive of Health and a sound Constitution than in Men. Among other Creatures, there is an Instinct answering such a Purpose of the Law, whereby the Females are provoked only at certain Seasons to Propagation, and abstain after Conception; Nature
inti-

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intimating by it a Lesson of Chastity to the Fair; that it should be their peculiar, as well as most ornamental Virtue.

Against it I can form to myself only two Objections: *First*, That it may be alledged the Activity of some Men this Way, might prejudice a weak Woman the same as a Number: And, *Secondly*, it may be asked how an Ulcer in *Vagina*, can acquire Malignity enough to communicate Infection on Coition, when the greatest Degree of Virulency in another Ulcer produces no such Effect?

But to these it may be answered, That the Strength and Activity of any two in Health, (constant to each other) will seldom or never be found so disproportionate as to become hurtful, (it is Change that makes the Pungency of Lust injurious;) when it is, the Disorder ensuing can be no more than a *Flux Albus*, or a Weakness without Malignity. And as to the other; Why an Ulcer here should sooner impart its Mischief than any other, is, That the Parts concerned are in all Respects more commodious for giving and receiving any Injury; and that the Heat raised and excited by Lust, gives a Force and Activity to the Salts generated under the Corruption; whereas any other Ulcer, though never so virulent, cannot emit Effluvia's in such Force or Numbers, nor to Parts so susceptible of their Reception: But if they had those Advantages, it is likely their Effects would be equal, many ill Consequences following from an Ulcer with Virulency in any Part incautiously dried up.

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That Lust also is a very necessary Adjunct for communicating Infection, and giving Force to those virulent Miasms that are, as it were, darted by it from her, we judge by that particular Power and Influence Imagination is found to have in the Commotion of these Parts. In this Case it is so much, that many infected Women avoid hurting their Husbands principally on the Moderation and Coolness of their Enjoyments; whereas a Stranger inciting more intense and vigorous Desires, as seldom escapes. The same may be said, where two or three, with weaker or stronger Inclinations, lie with one and the same infected Woman, that one, perhaps, shall be catch'd, and the others come off unhurt, chiefly as the Fancy on either Side is brisk and lively, inclin'd or disinclin'd.

Venereal Contact seems of such Necessity for communicating Infection, that with me it is a very unlikely Thing for Venereal Matter ever to do it without. *Those Adepts who have asserted the contrary of this, have done it in improbable Instances, saying, It is not always necessary a Woman be clapp'd to give it a Man, but that he may take off all the virulent Matter left in the Passage by a preceding Gallant; and she remain perfectly well; or that she may give it him by only taking the corrupted Matter from her Body in her Hand, and wetting his Privities. And others relate its highest Degeneracy, or a Pox to be contagious, by wearing the Cloaths, Lying, or Cohabitation, especially if the Infected be overspread with cutaneous Eruptions and Blisters.*

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There are but two Ways in this latter Case, whereby Contagion can be supposed to pass, and that is, by their throwing off a greater Quantity of noxious and virulent *Effluvia*, in the Manner some suppose the Plague and Epidemical Distempers to infect; or else (like what is related in the *Philosophical Transactions* concerning Contagion in the Itch) *Animalcule* are bred in those Globules dispersed about the Skin, which making their Way through, shift from Place to Place, and so carry Infection, they living (says the Relation) two or three Days when from the Body. But how well these *Assignata* may resolve other contagious Distempers, they appear here but light in the Balance; FACT Baffles PHILOSOPHY. And if all those who have suffered this Way, are like what have fallen to my Share, there is not one who could stand by any other Pretence than Coition. Whence we ought to account this Distemper a Mark of Divine Displeasure: We sin (as *St. Paul* says) against our own Body, and receive a present Correction, that the Sense of our own Interest might work on us, and bring us back to Temperance and Virtue.

I. How a Man becomes infected.

Women, we have adjudged sometimes to become infected by the Admission of Numbets, though sound and healthful: But a Man cannot by the same Means; because among other Reasons, there is this invincible one, That Nature is not able to support the Repetition of those
A&S.

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Acts to such a Multiplicity, or in such Measure, as with her who is passive: But, could that be, I believe also he might so contract it. Insatiable and impotent Efforts, or too painful Enjoyments, through the Straitness of the *Vagina*, as Immaturity, frequently discover some-

thing like this, in what we call *Christallines*, what they are. *Simple Gonorrhea's* and *Christallines*: The latter are puffed up, clear Swellings of the Prepuce like a Blister, and submit (when thus contracted) to Rest, warm Fomentation, and Cataplasm; though, perhaps, Time, Neglect, and ill Habit, might change, and make them become virulent, did not Pain, or the Debility of Nature prevent a further Use of the Cause that first produced them, and hinder our Actions from keeping Pace with the Viciousness of our Wills and Inclinations. For this Reason, therefore, Venereal Symptoms, so contracted, never settle or terminate in a Box: And I am apt to think, all Malignity that does so to him, or is contagious, *must always be from an infected Person, and always by Coition*. For a clearer Understanding of which, and the Manner of Communication, I shall cite two or three celebrated Opinions about it, and then subscribe my own.

Dr. Keil's Account of Infection in Men. Dr. Keil says, its Conveyance is by the Elasticity of the Air, thrusting the morbidick Matter into the excretory Ducts of the Prostate, which are empty on Coition; and that a Simple Gonorrhea is nothing but a Corrosion of the spongy Borders of those Vessels terminating in the Urethra.

Others

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Others think, a Gonorrhœa to be the Effect of a Fermentation made between the infectious Liquor, and that of the Prostata, and so without Corrosion, an Efflux thrown off like Yeast from Beer.

A second Opinion.

Thirdly, Dr. Cockburn supposes a Gonorrhœa to be the Increase of that Liquor that is discharged by the excretory Glands of the Urethra, and done by the Venereal Stimulus, in the same Manner as Cantharides applied, would do; the Quantity of Matter discharged being in Proportion to the stimulating Force they are affected with: And this Stimulus (he says) increasing its Acrimony, does in Process of Time, make Ulcers in the Urethra. This he farther opposes to Dr. Keil's Opinion, by saying, the Urethra will admit very little; and that there is no Muscle, Membrane, or Machine, alledged to help it forward: Not considering that he wants some such Help (as he objects) to carry the Infection to the Urethra.

A third Opinion.

Dr. Turner also (I think) places the Seat of a Gonorrhœa in these mucous Glands, whose Orifices have a Power of Opening, and contracting like Sphincter Muscles, but rendered flaccid by Venereal Taint, or Medicines ill administered.

Mr. Cowper's Dissections are brought to confirm this. The *Ostiole* of those Glands in sound Subjects being found firm, and with an Elasticity, as it were; and, in unsound, flaccid and loose, when at the same Time, the *Prostata*, *Vesicula Seminales*, and *Parastata*, were perfectly sound.

But

The Author's
Opinion of
Infection.

But these Opinions, besides their Opposition to one another, are deficient in carrying their Aim singly to a *Gonorrhæa*, without any Attempt at the Cause of a *Chancre*, *Cordee*, or *Phymosis*, which Men often become infected with, without a *Gonorrhæa*. I shall therefore begin my Inquiry here, being assured, that they at least want another and different Explication, which, perhaps, when found, will facilitate our Search about a *Gonorrhæa*; and if I am right in my Conjecture, they arise from the Strength, Activity and Solidity of the Salts hid with the Corruption; which being dispersed about the *Vagina*, are volatilized, and made fitter for Communication by the Heat of Lust, and received by the enlarged Pores of the *Penis*, where by their Pointedness they shortly effect an Erosion.

The Manner of this Imbibing or Suction on the Man's Side, is not absurdly accounted for by the general Relaxation that attends all sensual Pleasures, of which Coition is, perhaps, the greatest. Now, as it most exquisitely affects us, the Parts are relaxed, and made more easily susceptible of any Venom to be transmitted, and that again from her becomes enabled to insinuate, and escape through the Pores by the Pungency of their Salts, and Power they are darted with; and if the Degree of Relaxation in any Part be in Proportion to the Pleasure, (as in the agreeable Objects of any other Sense it is, where, though some Degree of it results to the whole Man, yet something remains peculiar

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culiar to the Sense of which it is an Object,) then the Instruments of Generation, by being most relaxed, will be also most fitted on that Account for the Reception of morbidick Matter.

Hence the genital Parts should always suffer first, and amorous Men soonest.

In warm Climates, the Uncircumcised of Soundest Constitution, will often find the Liquor from the *Glandule Odoriferae*, to fret and ulcerate without Care and Cleanliness in frequent Ablutions.

And if virulent Matter, thus externally lodged, can act like *Cantbarides*, and produce a *Chancre*, *Chordee*, or *Phymosis*, then I believe we may also, without any Repugnancy to Reason, think this outward Application of it in Coition, sufficient to produce a *Genorrhoea*; the Difficulty against it being only how this Taint can be transmitted hence to the *Prostate*: Which will not be so hard to imagine, if we consider what has been already said of the Power impelling, and the Aptitude to receive. We find all Parts of the Body porous, and, by many Experiments, receptive of any proper Matter incumbent on them, conveying and mixing a Portion with the Humours of the Body, as in Bathing, or Uction.

In all Translations of Tumors, whether by Revulsion or Derivation, this Sympathy and Communication of Parts is evident, and particularly in the present Case, where, on an improper handling, the Virulency will revert into the Blood, and produce all the Symptoms of a
Pox;

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Pox; and, indeed, all outward local Applications (*Epithemia, Epicarpia, Suppedalia*, or Emplaisters) to any Malady deeper than the Skin (without this) would be impertinent; they not only, therefore, by touching the *Fibrillæ* excite a new Motion in the Part, but evidently mix with the Blood: Why then should it be thought so extraordinary for infectious Matter, armed with other Properties than bare Fluidity, to affect these Glands at so small a Distance, since it must be acknowledged, the several Parts of a Member have a much easier Communication with themselves, than with the Whole? as we often see in the quick and ready Translation of a *Gonorrhæa* to the Groin and Testicles, and *vice versa*, the gradual Retraction of the Glands after Emission, and the Lubricity of the Passage also help?

The only remaining Objection to this Transmission by the Pores, is, That the greatest Corrosions at the Glands and *Præputium*, are rarely attended with a *Gonorrhæa*; whereas, were such Corrosions thus effected, as it would be an Argument of a stronger Infection, and the Corrosiveness of that Venereal Matter to be greater, it should as seldom miss. This seems to be from the Contraction, Pains, and Swelling, that attend those Ulcers, whereby the Passages to the *Prostata* are straitened and obstructed; but a slighter Degree, creating no such Impediments, easily passes, and is sufficient to propel that Humour from the Glands, which in a less Proportion, is their Nature and Office. From hence we may learn, a *Gonorrhæa* to be the mildest Species of Infection.

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If any one should yet object, and think the *Mucous Glands* of the *Urethra* more easily reached than the *Prostata*, and so to be the *Seat* of a *Gonorrhœa*, I shall no further insist; either or both may in their Turns be touched, i. e. the constituting Vessels of those Glands will, by the Taint communicated, be rendered weak and flaccid, parting on such a *Stimulus*, not only easily with their Contents, but changing them (as happens in many other mixed Liquors) to dark, muddy, and thick Consistences; and when the corrosive Power has been very great, destroying the *Ostiole* of those Glands terminating in the *Urethra*; when it has played there too long, or Mercurials have weakened the Vessels, then sometimes will follow incurable Gleet.

From the Whole of this Explication, we may see a Reason for that Custom in many foreign Countries of washing the Privities well after Coition, (to wit,) that they find it preventive of Infection; and, perhaps, Circumcision was not instituted by that renowned Law-Giver *Moses*, or the Impostor *Mahomet*, nor practised by ancient Nations, without a View to the Cleanliness of this Part, and Prevention of foul and loathsome Distempers.

Those who account for a *Gonorrhœa* thus, do not say, a *Disuria* is from an *Excoriation* in the *Urethra*, but that the Sharpness of the Infection thinning and carrying off the *Mucus* from the Membrane that lines it, is made more sensible of the pungent Salts of *Urine* passing through: Which they would confirm by the Nature of Patients Complaints; who don't speak of the

L

Heat

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Heat of Water, as a Pain confined to one particular Spot of the Passage, but diffused; and seems an equal Vellication of the whole Membrane.

II. The Cure of this Distemper.

Definition of a A virulent Gonorrhœa, or Clap, is the Emission of infectious Matter from the corroded Glandular Prostate, or those of the Urethra, accompanied with a *Disuria*, or, in other Words, the involuntary Flowing of Matter through the Urethra, with Pain, Inflammation, and Heat of Urine. These are its *Pathognomick Signs*; and the Degree they are in, with respect to Consistence and Colour in the Running, (as Yellow, Green, or the like,) or Pain in Water, are, what we may take the Measure of Virulency from, and will be found more or less, in different Subjects, according to the Malignity of the infected Person, and Constitution of the Receiver.

A *Disuria* is a necessary Consequence of the Running, it being a Pain from the acrimonious Salts of Urine washing through the Parts which that has excoriated.

The Cure I shall lay down under these two Intentions: First, To conquer and carry off the Malignancy. And, Secondly, to heal and strengthen the debilitated Parts.

Mercury

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Mercury only is able to answer our first Intention, and effectually to subdue the Poison of this Distemper: The Reason why it has a Power beyond other Medicines for this Purpose, is its Gravity, and because its constituent Parts are extreme small, smooth, and spherical: The latter Qualification fits them for an Admittance into the smallest Passages, (even those almost indiscernable ones of the Glands,) and its Weight breaks all Coagulations, and fits the morbidick Matter for natural Secretions. And whatever Sights some may put on this common Road of proceeding, yet till better convinced in the Virtues of the several applauded *Specificks* that have appeared abroad in the World, I take Leave to defend it, as a *safe Practice*. For although a tedious, or an ill Cure, now and then happen, it is not justly so much a Charge on the Medicine, as the Method; when we leave off too soon, or continue it with Purges too long, a Practice equally mischievous. But more of this by-and-by.

I am surprized that every Body by their Practice should allow *Mercury* to be the only Foundation and Retreat for Cure in the last and stubbornest Stage of this Distemper, (a *Pox*;) and yet deny its Virtues in a milder Season. It must be confessed, there are too often seen many ill Effects from this Mineral; and on a serious Reflection, I cannot but think most of those deplorable Objects found in Hospitals, or elsewhere, whose ruined Constitutions are attributed to the *Lues*, to be with more Truth and Justice ascribed to *Mercury*. But then this is

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not the *Use*, but the *Abuse* of it : An unskilful Management often precipitating Patients (and that in a short Time) into such miserable Circumstances, as the Distemper, left to itself, could not in Years (if ever) have produced. From this Prepossession many take a Handle to recommend their infallible *Nostrums*, which, when good for any Thing, still have this for their Basis.

The Ingenuity of making *Mercury specific*, will lie in the Measure and Manner of Administration ; that it suit such Degrees of Infection, and such Constitutions : A Point wherein one Man will excel another, according to their different Capacities, and Opportunities of Experiment : All other Ways are supported by nothing but a *Brass Front*. The many successful Attempts of those who publicly invite Men to *Safe and Speedy Cures*, have pretty well exposed that Sort of Credit ; and People see it to be nothing but a Competition in Cunning ; who shall betray with most Success, without the least Candor or Regard to the Promises they make : Nor is it a small Disparagement to *Arcana's* here, that they are generally lodged with the Illiterate ; who grow bolder in their Assurances of Infallibility, in Proportion to the Contempt their Physical Skill is held in.

If one in twenty comes off unhurt (we will not say, cur'd) by a *Specifick*, or a *Nostrum*, a Certificate is easy.

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*The Pictures which escape, they wisely keep:
But where are those that perish in the Deep?*

GARTH'S DISPENSARY.

I begin the Cure with a strict Regulation in Living, particularly an Abstinence from spirituous Liquor and salt Food, and prescribe directly a *Mercurial Bolus*.

R Mer. Dul. gr. xij. Conf. Ros. q. s. f. Bolus bora somni sumend. purging it off next Morning with an Infusion of *Senna*. After the first or second Time, I increase the *Mercury* in the *Bolus*, and give stronger *Catharticks*.

R Pil. ex duobus ʒj. Rez. Jalap. Bals. Peruv. ana gr. ij. Calomel. gr. vj. fiat Pil. N^o v. mane vorandus.

Vel R Pil. Cochiae ʒi. Calomel. gr. x. Ol. Junip. gr. iij. f. Pil. deaurand.

Vel, R Elect. Lenitiv. ʒij. Mer. Dul. gr. x. Rez. Scammon. Jalap. an. gr. iv. Ol. Carui gr. ij. M. Constantly administering, at the End of their Operation, a Purgatorick Draught.

Purges are given after *Mercurials*, (I believe,) not so much from a Supposition that their Virtues immediately reach the Part affected, and subdue the Poison directly, as from a distant View of altering the Habit of Body, and carrying off those vicious Humours that would else probably take their Course that Way, and heighten the Fury. This Opinion is founded in Practice; where nothing is commoner than

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from two Men infected by the same Woman, to see the one cur'd in a few Days, when the other, perhaps, requires Months; which can be from nothing sooner than their different Habits.

Purges are designed likewise to prevent any ill Effect from too great a Quantity of *Mercury* remaining at once in the Body.

Mercurials, we are sure, when their Operation is by the Salival Glands, and for some Constancy, will remove the most confirmed *Pox*, (or no other Medicine known in the World will;) and this, by returning the contaminated Fluids to a sweet and balsamick Liquor. In lesser Degrees of Infection they will effect the same by the intestinal Glands: *Purges* are therefore only to direct their Operation that Way; and the more or less of this, is the Point of Judgment in Cure; which is to respect the Difference of Constitution and Degrees of Infection.

This may suffice for their Defence in general. There remains another material Consideration in the Use of them, and that respects the Frequency of their Repetition. And rightly to understand a Proportion in this, we are to consider, that as the Malignancy of a *Gonorrhoea*, Nature herself, in good Constitutions, with proper Dieting only, would run off in a due Quantity of Time; and that our Administrations are but her Assistants thereto: The Faults may be equal in leaving them off too soon, or continuing them too long: By the former the Infection is not conquer'd; and by the

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the latter, the Constitution is enervated, and Nature's Efforts weakened, instead of being assisted. In Consequence of this, I repeat the *Mercurial Bolus*, and purge no oftner than Reason tells me their Strength will admit, without a *Hypercatarsis*, Fainting, or Loathings; (which is with some every other Day; with others twice a Week, or less;) and in the Intermissions, give largely of the following *Apozems*, or *Emulsions*.

℞ Sem. quatuor frig. ℥j. Aq. Menib. s. ℔ij. Sal. Tartar ℥j. fiat Emulsiō Sacchar. candid. ad gratiam edulcorand.

℞ Amygdal. dul. N^o xij. Sem. Papav. ℥ij. contundantur & sensim affunde Aq. Plantag. vel deoat. Florid. ℔ij. Syr. Alib. ℥j. fiat Emulsiō.

℞ Decoct. Pectoral. ℔ij. Spir. Nervi doli. ℥j. fiat Apozema.

℞ Sal. Prunel. Sacchar. candid. p. e. M. f. Pulvis sumat ad Quantitatem Scrupuli in Cerevisia tepid. ter in die.

As these, or other Forms of *Diureticks*, are supposed to ease the Heat of Water by increasing the Quantity, and so diluting the Salts; so to this End, such an Injection may be serviceable also, as is soft, and can leave something of a mucilaginous Substance to lubricate and defend the *Urethra*.

Solutur G. Tragacanth. vel Arab. vel Ichyotol. in sero. Lactis, colatur. tepide injic.

Signs to judge
of the Malignancy, and a
Continuance
of *Mercurials*.

While we are continuing the Use of these, it will be proper to weigh with ourselves, what are the Signs of our first Intention being answered, and sufficiently authorize us to leave them off: For there is no doubt

a Period, which the Skilful discern, wherein a Change for healing Balsamick Medicines is necessary, and required; and which, as we come short of, or exceed, may be either way pernicious: For, *First*, if (while the Signs of Malignancy abide) too sudden a Check be given to the Running, either by the unseasonable Use of Astringents, or too quick and strong Purging in the Beginning, which turns to the same, then it will either revert and taint the whole Mass of Blood, or produce, by a nearer Translation, acute Pain, Tumor, and Inflammation of the Groin or Testicles; which may prove of as unhappy Consequence; particularly, in the last, the Pains are agonizing, and attended with *Fever*, *Syncope*, and *Nausea*, and the Membrane wanting Fat, never without Danger of Corruption and Gangrene.

The Consequence, of too long a Course of *Mercurials*.

Again, if, on the other Side, the proper Season is miss'd of doing it, and there is too cautious and long an Adherence to *Mercurials*, or irritating Medicines, whether Catharticks, or Diureticks, the Running goes on without End, and, at last, brings an irrecoverable Laxity on the Parts, converting a *Venereal* to a troublesome *Seminal Gleet*.

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To avoid these Extreame, I take the proper Indications for Where to stop. Such an Alteration to be Absence of Pain, and Soreness about the Groin and Testicles, when the Distention of the Yard is gone off, when the Heat of Urine is considerably abated, and when the Running is of thick and equal Consistence, changed in Colour, and lessen'd in Quantity; for as the contrary of these are what constitutes its Virulency, so their Remission must be Signs of Amendment, and a proper *Stadium* for changing the Method. It is not to be expected a Running should ever so entirely change, as not to leave a Stain, which some do sillily imagine: No, it will be sufficient, that there are considerable Alterations in the Respects abovemention'd: The better those appear, indeed, the safer shall we be in stopping it; and let the remaining Matter revert where it will, (separate from Signs of Malignancy,) it can be of no more Hurt, than the drying of an Issue, or other simple or common Ulcer.

The second Intention, is, to dry up the Running, and heal and strengthen the debilitated Parts. The former Part of this Intention I have compass'd sometimes (in *Athletick* Constitutions) by a single quick Purge; which shews, that a *Cathartick*, without any other Property than its stimulating Power increas'd, will turn astringent, and dry up the Liquor of the Glands. But as Circumstances will prevent this from being the constant Effect of it, and that (like

L 5

* Mrs.

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* Mrs. Avery's Case) it will be far from happening every Day, I shall select some of those Preparations I've most successfully experienced, and range them in their Order of Healing and Astringency, to sort with the better or worse Appearance of the Indications above; and doubt not but a due Observance to the Season of their Administration, together with a thick glutinous Diet, (which under this Intention should always be directed,) will make them answer as effectually with others.

R Sal Prunell. ℥ij. Pulv. Rhabarb. ℥ij. Troch. de Agaric. Albandal. an. ℥ij. Annim. Diaphoret. CC. ppt. Mer. dul. bene levigat. Rex. Jalap. an. ℥j. Elect. Lenitiv. ℥ij. Bals. Capivi q. s. sumat ad magnitud. Castaneæ omni mane & Vespere.

R Pul. Rhabarb. ℥ij. Sal Prunel. ℥j. Nucis Moschat. ℥j. Bals. Capiv. Peruv. ana ℥ss. sumat omni mane ad duas vel tres Dejectiones promovendas.

R Ichthyocoll. Albiss. ℥j. decoq. in Aq. Font. ℥xij. colatura adde Aq. Rosar. ℥j. M. sumat Coch. ij. (in lacte vaccino dissolut.) quatuor in die.

R Cortic. Peruv. ℥j. decoq. in Aq. Font. q. s. ad ℥viij. colatur. hujus ℥ij. P P. ℥i. Aq. Cinam. ℥j. M. F. Hanst. octava quaque hora sumend.

R

* A Quack Advertisement.

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℞ *Terebinth. Venet.* ℥℥. *Vitell. ovi syr. Bals.*
℥j. *M. in. Cyatho Vin. alb. sumend.*

℞ *Boh. Arm.* ℥j. *Bals. Capiv.* ℥iij. *capiat*
unciam semis quotidie. semel vel bis, alvos
promovet.

℞ *Boh. Arm. sang. Dracon. Terr. sigillat.*
Pul. Rhabarb. tort. an. p. æ. Tereb. Ve-
net. q. s. f. Pil. mediocres sumat quinque bis
in die.

℞ *Pil. Cretacea B. eodem modo sumend.*

℞ *Decoct. Guaiac. sepe sumat Haust. in qua in-*
stillat. q. xx. Tinct. Guaiac. vel Tinct. ex
Bals. Peruv. Gilead. &c.

℞ *Satrb. Saturn. Vitriol. R. an. ℥℥. dissolv.*
in Aq. Ferraria Hil. & filtretur pro in-
jectione.

℞ *Aq. Plantag. ℥vj. Tinct. Myrr. ℥j. vel*
Tinct. Veneris ℥℥. tepide injicitur.

To these we may add the Use of the Cold
Bath: It give a Contraction and Tensity to the
Fibres in general, and therefore must close
the Orifices of these Ducts in particular.

III. Symptoms of Virulency.

The other Symptoms of Virulency, which de-
nominate a Person clapp'd, and that as well
without, as with a *Gonorrhœa*, are the *Chordee*,
Phymosis, a *Periphymosis*, *Chancre*, and *Bubo*.
These I chuse to speak of separately in their
Cures, because they require (besides an internal
Use of *Mercurials*) local Applications.

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A *Chordee* is a painful Contraction of the *Frenum* in Erection, caused from an Inflammation of that Membrane; which, on that Account being thicker, is consequently shorter, and must excite a Pain, when the Erection of the *Penis* stretches it.

Dr. *Cockburn* distinguishes another Chording Pain, arising from a Sore or Ulcer in the *Urethra*, as often as it comes to be compress'd by an Erection of the *Penis*; and infers from it, how far within the *Urethra* the Seat of a *Gonorrhoea* is. But against this I object,

First, That if an inflated *Penis* can so painfully compress this Ulcer on all Sides, why should not a greater Compression with the Hand do it without Erection.

Secondly, If a *Gonorrhoea* be an Ulcer in the *Urethra*, and the Chording Pain a Compression on that Ulcer, then they must be inseparable Companions; and no *Gonorrhoea* could be without it.

And, *Thirdly*, I have known the *Chordee* often continue after a Running has been stopped; which, by this Allegation, could not be true; supposing (as we reasonably may) that where there is no Running, there is no Ulcer: The proper local Remedies to it, are *Fotus's* of Milk wherein Lilly, Elder, or Marsh-Mallow Root has been boiled, and a little *Sacchar. Saturn.* added, or in their stead, the *Cataplasma Resolvens*.

A *Phymosis*, is when the *Præputium* is difficult to bring backward, A *Periphymosis*, when it choaks at the Neck of the *Penis*, and will not

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not without Pain or Trouble be brought forward over the *Glans*. In some, these are natural Difficulties; but here, the Effect of Tumor and Inflammation, as those are again of *Chancres*.

Chancres are Venereal Ulcers on the *Glans*, *Præputium*, or *Frænum*. They are, with the *Phymosis* (as was observed in the Beginning) occasioned when the Venereal Taint is lodged here, and does by its sharp Qualities, both coagulate those Liquors that lubricate the Glands, and corrode the Fibres constituting them. The latter are *Chancres*, the former *Phymosis*; for a *Phymosis* is nothing but the effecting a Tumor on the *Glans* and *Præputium* at the same Time,

To a *Phymosis* the Injections should be mild.

℞ *Aq. Plantag.* ℥ij. *Troch. alb. Rbas.* ℥j. *Mer. Potab. gr.* vi. to be thrown between the *Glans* and the Foreskin with a Syringe, and retained there a little to wash and cleanse it: This often in a Day, especially if attended with *Chancres* to hinder their Agglutinating: A Fomentation should be likewise used, and a Cataplasm of the Seeds with a little *Ol. Lilior.* in it; or this following:

℞ *Mica Panis M.* j. *Farin. Hord. pul. flor. Cham. ana M.* s. *coquantur in lacte ad consistent. Cataplasma. finita Decoct. adde Ol. Sambuc.* ℥j.

If the Largeness and Stricture of this Tumor threaten Suffocation and Gangrene, open it by one Incision, sufficiently to clear the *Glans*; the deeper,

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deeper the more incommodious will be the Cicatrix.) If Necessity calls for it, or an Adhesion should require more than one such Cut, it is better to take off the whole Prepuce.

To a *Chancre* this Lotion. *Rx. Aq. Plant. Rosar. an. ℥j. Troch. alb. Rhas. ℥j. in hac instillat. g. xv. sequent. liquor.*

Rx Mer. sublimat. ℥ij. dissolut. in sp. Vin. ℥i. & filtretur. Or,

Rx Aq. Calcis ℥j. Mer. sublimat ℥j. solut. & filtretur pro usu.

Rx Un. Basilic. ℥j. Præcipit. rub. ℥j. no. pro Unguento.]

Dr. Cockburn's Arcanum : *Rx Hydragyr. Tereb. Venet. an. P. Æ. F. Unguent.*

A Malign or Venereal Bubo is dangerous to repel, and should, from the Beginning, be assisted to Suppuration by Emplasticks, Cataplasms, Cupping and the like: An Intention that will be found difficult to succeed in most and when compassed, without great Care, will turn fistulous.

I have run over this Section with little more than placing some proper Prescriptions under the several Heads, avoiding any nicer Disquisition in the Choice of them, or Season of their Use; not because they are entirely void of Efficacy, but because I am satisfied neither they, or any other *Arcana*, will alone answer the Purpose. Revulsion the most probable Method of relieving the particular Part (by Venesection emetick or purging) will, in these Cases, ever leave a worse Injury, taint the whole Mass of Blood: They are all short, therefore, of the Eulogiums be-

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bestowed on them; and if not impertinent to the Ends proposed, are yet vexatious and tedious; and since they are so, and have a greater Tendency to a *Pox* than a *Gonorrhoea*, it's expedient, and I think a very good Practice, presently to resort to *Turkish*. for a Revulsion, or else, by some other equivalent *Mercurials*, to procure a Spitting: There is nothing these Symptoms better or sooner submit to; for as the Mouth grows sore, there follows a Mitigation, the Matter is diverted, the *Chancres* heal, and the Parts suddenly regain their pristine Form and Tension.

Eight or ten Days Continuance in a moderate Salivation, will ordinarily suffice to vanquish them; but if the Distemper proves more deeply rooted, requiring one of stricter Confinement and Regimen, take the following Rules.

Of Salivation.

The Symptoms of the *Pox* are cuticular, Eruptions, Blotches, Pocky Symptoms, Ulcers in the Throat and Palate, nocturnal Pains of the Head, Shoulders, and Shins, Caries, Night-Sweats, Alopecia's, falling off of the Nails, Gummæ, Nodes, *Talpa's*, Consumption, and *Marasmus*, *Amor. intimus hæret medullis*.

How a Clap comes to end thus intractably may be partly attributed to the Malignancy of the original Infection; partly to the Predisposition, or ill Habit, whereby the Blood becomes more easily receptive of that Venom; but most often

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often to an irregular Management of Cure, and use of *Specificks*: It exceeds my Design, as well as Capacity, to unriddle further the Nature of this Venom, in its several Appearances under that general Denomination of a *Pox*; having only intended here the short *History of a Salivation*, by which the most of them are effectually to be removed.

A *Salivation* is dangerously undertaken with aged People, with such as are lean, or dejected through Trouble or Misfortunes, 'or much emaciated; but especially with those whose Lungs are any Way distempered, that are Hectical, Phthysical, and Consumptive, to such a Salivation is certain Death; because, as this Habit is acquired by the glandulous Secretions being increased, *Mercury* pe-jorates the Mischief; and the more so, if such Indisposition has proceeded from a former ill Use of it: It bursts those fine Vessels that before had lost of their Strength and Elasticity by the Distemper, and forces Blood by the Mouth, or partial excessive Sweats, in the Body, or both. Dr. *Moulin* assures us from Experiments, that *Mercury* is very prejudicial to the Lungs, because they want that strong, brisk Motion the Muscles have in other Parts, and by their lax and spongy Texture are extremely unfit for clearing themselves of so troublesome a Guest: This (*says he*) we daily see from Persons often fluxed; who are afterwards observed to die of Consumptions, that will not give way to any Course of Medicine: He injected *℞i℞ Crude* into the Jugular of a Dog, that

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that died four Days after of a violent *Orthopnea*; the Outside of the Lungs being blistered, and containing mercurial Globules. To which likewise agree many interspersed Places in *Martin's Collection of Bawdy Letters, in his venereal Treatise.*

Mercury, i. e. the Preparations in use, ordinarily operates by a Flux through the Salival Glands, and by the Parvity of its compounding Parts has a peculiar Aptitude thereto: The Benefits from it seem as much from the uninterrupted Continuance of its Operation, as any specifick Virtue in the *Mercury*; for the Blood has *Leisure*, by such a Length of Time as a *Salivation* takes up to separate its noxious and incongruous Parts, which are daily washed and spewed out by the thin Liquors continually taken, and consequently the Remainder, after such a Defæcation, becomes more Homogeneous.

A *Salivation* is raised by *Mercurials*, and that either externally, or internally used. Two or three Purges always precede as preparative; and after that, if we intend it by *Uction*, make up the following Ointment, and draw on a Pair of Gloves and Stockings after the Use of it, to keep the Linnen and Bedcloaths clean.

*R Argent. Vinum ℥iv. Axung. Porcin. ℥xij.
M.*

An

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An Ounce of this is to be
 By Uñction. used at a Time for three Days
 successively, beginning the first
 Illination on the Wrists and Ancles only,
 leaving the Patient to chafe it in with his Hands
 warm'd before the Fire; the second higher, a-
 bout the Joints of the Knees and Elbows; and
 the third yet further up, but cautiously, because
 the nearer you anoint to the *Abdomen*, the more
 likely the Body will be of being laxative, and
 elude its proper Operation: If these three In-
 unctions answer not the Purpose, we must
 still repeat it, and help forward with a Bolus
 of *Turbith*.

This Way by Uñction I prefer, especially in
 weak Bodies; the other more certainly causing
Nausea, Vomiting, Looseness, Faintness, and
 the like Accidents, that interrupt a regular Course
 of Proceeding, and give great Uneasiness to a
 Patient: But since Uñction has also its Faults,
 and is offensive by its Smell and nastying the
 Clothes; since many also differ from me in this
 Preference, and give it to *Mercurials*, internal-
 ly administered; and lastly, since the Rules to
 prevent those Symptoms mentioned, will re-
 quire more Attention in the internal, than
 external Use of *Mercury*, I shall chuse to
 finish the Course in that Method, and for ea-
 sier Apprehension, divide the Flux into a Be-
 ginning, State, and a Declension.

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In the Beginning, or first Attempts to raise a Flux, the only Thing to be feared and guarded against, is a *Diarrhea*, which diverts the Operation of the

And by internal Administrations.

Mercury from the salival Glands: This we must take notice is prevented, or abates and goes off, in Proportion as we can procure a Soreness in the Mouth and Jaws, and increase the Dribbling; and therefore a very great Stress lies in the Manner and Method, as well as in the Administrations themselves, and in a good ordering the Patient as to Diet and Confinement.

First, We have said two or three Purges are to precede. And the Reason of this is, that besides preparing the Body for succeeding *Mercurials*, they leave an Astringency that makes a Patient less apt to it after; wherefore those of them that leave more than others of that Property behind best suit the Purpose; as the

Potia communis purgativa Sydenham.

Secondly, In administering *Mercurials*, the Bolus should contain but a small Dose at first.

R^e Mer. Dul. gr. x. Laud. L. gr. ij. Conf.
Ros. q. s. fiat. Bolus quaque nocte sumend.

And be increased two or three Grains every Repetition; because large Doses of it in the Beginning exert too much Force in the *Prima Via*, and by the Effect of their own Irritation are pass'd off with the Contents; whereas a small one, without giving such Disturbance, leisurely intrudes itself, and in the Circulation arrives at
and

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wound the Salival Glands; and when once it has obtained that Path the subsequent Doses more easily follow, and remove all Fears of a Diversion,

Thirdly, The Diet has its Use towards this End, and should be dry and astringent; Rice, toasted Cheese, Yolks of Eggs in mull'd White Wine, a Harts-Horn Drink, and Roast-Meats in general, are proper Food; minding to continue the most nourishing of them, (the Meats) as long as we can to support the Strength through, for in the Progress, the Throat will be too sore to bear swallowing any Thing but Liquor.

Fourthly, Another Means conducive to it, will be guarding against Cold; which would by constringing the Pores, make the Body loose. *Cutis densitas, alvi laxitas.*

These few Rules premised, we may go on with the *Mercurial Bolus's* for three or four Nights successively; and if the Spitting in that Time is found to have advanced but slowly, or the Body is laxative, alter it for one of *Turb. Min. a gr. v. ad viij.* giving an Anodyne Draught at the End of its Operation.

Two or three *Turbis. Bolus's* following the other, and increasing their Dose, a Grain every Repetition, (*a v ad viij.*) may be expected to raise the Flux; but Constitutions differ, and will be always an Exception to any stated Number I've known two *Bolus's* of *Calomel* raise a Salivation, and other Times twenty fail. An $\frac{3}{4}$ of *Mercury* by Uction do, and at other Times this ineffectual. The latter was my common Way with Sailors, whom I have frequently salivated

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livated on the *Ollap*. And here it may not be altogether unfit to mention the opposite Consequences, that at sometimes proceed from the Use of a Quantity under different Symptoms: I have known nocturnal Pains of the Head and Shoulders, that have been removed by using such a Quantity in Unction, though a Spitting never succeeded; and yet the same persisting when the Case has been Eruptions and stinking putrid Ulcers, has not only failed, as to the Salivation, but rendered the Case deplorable, by increasing their Number and Quantity of Matter, and consuming the Patient in colliquative Sweats. But in this, Reason and Experience must be our Guide: We must be able to know when the Mercury operates kindly, and whether the Patient's Constitution and Courage will support him through the Course; because now, if the Success is doubted, we may safely divert with Catharticks, which in the Increase will be dangerous and impracticable: For my own Part, I have seldom missed, more or less, of a Looseness in the raising a Salivation, and have persisted in the Use of *Turbith*, when a Patient has had sixteen or eighteen Stools in a Night. But this has been in robust strong Bodies; and with this Caution, of giving a Respite for a Day or two, a Hartshorn Drink, and an *Anodyne* Draught.

If in the Beginning of a Flux there should be a more than ordinary Pain in the Jaws and Mouth, and the *Saliva* running off bloody, we are not always to be startled at it; they are the common Attendants of Mercury, and reach no farther than the Parts immediately affected;

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a Day's Intermission from Mercurials will palliate, and in a great Measure correct such Uneasinesses; and to prevent their Return and Aggravation, we may perfect the Remainder of our Work by Unction; which does not affect with so much Pain, as Mercury received by the Mouth, does.

The Spitte at first is thick and clammy; but as it increases in Quantity, grows thin and serous.

The State of a Salivation

By the State of a Salivation, I mean all that Time from a Patient's spitting about a Quart in twenty-four Hours, till its Height and Return to that Quantity again, which may include a Fortnight, or more; and during this, the exactest Regulation is required to promote the Flux, and avoid the Danger of a Diversion. The Beginning has less Regard in Regimen, because the *Fauces* as yet suffer solid and nourishing Diet to pass and sustain Nature; but in this their Soreness will admit of nothing but soft Liquors, as thin Broths and Gruels; which, as they afford very little Nourishment, and that the Flux is still greater, a Faintness and Debility follows of Necessity, that will constrain us to stricter Rules. The Patient must be altogether confined to the Bed; he must be kept between the Blankets; the Bed well Jin'd; the Room close and warm; and a *Jalap pro languoribus*; the Head and Jaws should be covered also with Flannel; it repels the Effects of Cold, and is *anodyne*. Lastly, the Mouth should be frequently

quently washed with the Liquids they drink, to cleanse and scour the Glands from Filth, that they may the more freely spue out their Contents. For this Purpose, therefore, and also for quenching the continual Thirst they will be under from a large Spitting, Plenty of them must be in Readiness; and they should be used warm, because Cold (in this general Ulceration of the Mouth) would create great Pain, check the Flux, and hazard the falling out of the Teeth. If there should be a Necessity to check its Activity, *Flos Sulphuris* is the Medicine.

I account the Salivation well raised, if I can make it amount to about two Quarts in a natural Day, and continue it so for eight or ten; but let the highest Quantity be what it will; whenever it lessens regularly, it signifies the Mercury to have spent its utmost Force and Power, and puts us on Considerations for our last Branch, *The Recovery, or State of Declension.*

The Recovery, or Declension.

A Flux that has advanced kindly to its Height, will as gradually decline; and in the Close of it calls for Physicks and Diet-drink to expel the Remains and Recrements of the Mercury: They are not given till the Swelling and Soreness of the Jaws and Mouth are well abated, and the Draining little: Some there will be while the Mouth continues sore; because, while the Fibres are excoriated, there will be a proportionable Vellication that will express the Juices within their Contact; and this might continue

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continue an inconvenient Length, if the Humours were not diverted, and the Ulcerations dried in the End by *Enema's*, *Catharticks*, and *Gargles*.

℞ *Pil. Coch. Extr. Rud. ana gr. xv. rez. Falap. gr. iv. Ol. Carni gutt. ij. f. Pil. N^o v. deaurand. ad sex vices repetand. alternis diebus.*

℞ *Fol. Sennæ Alex. ʒj. Zinzib. Sal Tartar. ana ʒj. Infunde tepide per noctem. Colatur. ʒiiij. adde Ol. Anisi gutt. j. Syr. Rosar. Solutiv. ʒ. vj. M.*

℞ *Manna opt. ʒj. dissolv. in ℥j. Aq. Strethamens. & superbib. ℥iiij, Aquæ ejusdem singulis diebus.*

℞ *Aq. Rosar. Plantag. ana ʒiiij. Mell Rosar. ʒj. Ol. Vit. gutt. vi. pro Gargarism. ad os eluendum.*

℞ *Fol. Plantag. Myrtill. in Aq. Flor. de-coct. Colatur. ʒviiij. adde Syr. è Moris ʒj. M. F. Gargarism.*

Diet-Drinks are appointed in Conjunction with these, and may be continued six Weeks or two Months. They together subdue and carry off the Remnants of the Mercury, heal the Excoriations of the Mouth, and the Drinks, in particular, correct the Acidities of the Blood, and procure a gentle *Diaphoresis*, which very much avails in finishing a Removal of all Pains.

℞ *Baccar. Junip. ʒj. Rad. Liquorit. Sem. Fenic. ana ʒj. infunde in Cerevisia tenuis cong. j. colaturæ, adde Sp. Coclear. ʒij. pro usu.*

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- ℞ *Lign. Sassafras. ℥iij. Sarsæ, Guaiac. ana ℥ij. Rad. Liquor. Sem. Coriand. Anisi, ana ℥j. CC. Raz. ℥iij. bulliant. in ℥xvi. Aq. ad xij. Colaturæ bibat sæpe in die.*
℞ *Thæa fact. ex lign. Sassafras. bibat.*
℞ *Cerevisia è Lignis Doctoris Fuller.*
℞ *Decoct. Dieteticum Sydenhami pro Potu communi.*

SUFFUMIGATION.

Suffumigation is sometimes substituted in room of the preceding Course ; and is said to remove Pains, and dry up running Ulcers, or a *Caries*, better, and with more Dispatch.

In the Management of it, the Patient is stripped naked; and placed on a Stool with a Hole through; under which the Fume is put : He is covered all over with Blankets, (except the Head, for fear of Suffocation,) which are drawn pretty close about the Neck to keep the Fume in. When Sweat begins to come, he must be put to Bed, and there well covered for an Hour or two ; and this repeated six, seven, or more Days, according to the Urgency of the Symptoms. The Fume is made of *Cinnabar*.

- ℞ *Cinnabar. factitia ℥iij. Thuris, Styracis, ana ℥j. M. F. Pulvis.*
℞ *Cinnabar. ℥ij. Styrac. Calamit. Nucis Moschat. ana ℥ij. Benzoin ℥iij. cum Terebinth. F. Trochisci.*

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Bellost's Pill.

Mr. Bellost's Pill comes recommended as an excellent Medicine in pocky Subjects: Dr. Turner, in his Piece against Crude Mercury, commends its wonderful Success in Nodes and Scabs, (p. 176.) but generously owns he did not find it always to have the same Effect, and was very lately forced to salivate two Patients after a great Number of them had been taken ineffectually.

The Pill, as transcribed from the *Strasburgh Dispensatory*, is,

℞ Troch. Albandal. Diagred. Sulphurati Pulv. Jalappa, Argent. vivi a ℥j. Terebinth ℥ij. M. Inserviunt præsertim in morbis Veneris. dentur ad ℥j. vel ad ℥ij.

Dr. Turner alters the Composition in his own Practice thus: He incorporates ℥ij of Quick-silver with 3℔ of Turpentine; and having rubbed it in a Mortar, into the most imperceptible *Molecule*, he adds *Pil. Cochæ min.* 3℔. or *Syr. e Spina*, with as much Crabs-Eyes as will bring it to a Pilularly Consistence. Of this he makes twelve Pills, to take one every Morning and Evening; which gives two or three Stools, without Gripes or Sickness: If he would divert its Operation to the Pores, he directs large Draughts of hot *Guaic Decoction* after the Evening Pill, and the Patient to be covered very close.

From both their Writings I shall make an Observation or two for Practice.

First,

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First, The Mercury, thus mixed in Pill, is on both Sides acknowledged one of the greatest Medicines in the *Materia Medica*; both, I say, as it is a Pill; for *Bellost*, in all the Cures he historizes (except in the *Volulus*, *) ever gave it so; and calls it *Crude* up and down his Writings, as I take it, only in Opposition to those Preparations by Fire and Sublimation in Chymistry, that alters it into a Poison: Nor can I see one Word in him (excepting as above) that gives Approbation to the present Humour of swallowing it in Substance.

Secondly, They say, and very justly, that besides its peculiar Efficacy in pocky Symptoms, its Gravity and Sphericity, when well divided by an assiduous Trituration, will be capable of entering the Lacteals, Lymphaticks, and minutest Vessels of the Body, (though crude, it hardly ever can,) and consequently becomes thus the most powerful Deobstruent in Nature; will remove (if removeable) all acid Coagulations, glandular Obstructions, stubborn cutaneous Diseases, *Scrophula's*, congested and cold Tumors. To these Mr. *Bellost* adds, that his Mercury (*i. e.* his Pill) has cured the Stone, Gravel, Retention of Urine, Cholick, Gout, *Scirrhus* of the Liver, Wens, *Carcinoma's*, Tettors, Leprosy, *Sciatica*; even has made, or can make the Blind to see, and the Crooked straight; and that in a little Time, and with a small Number of them.

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* Vide *Hospital Surgeon*, Vol. II. p. 56.

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We may allow a little Exaggeration to a Medicine a Man is fond of, and perhaps the Inventor. But,

Thirdly, what I mind is, that both these Gentlemen found it apt to salivate. Dr. Turner says, that twelve of his Pills raised, and six more, continued a Salivation three * Weeks. And Bellost, that it once raised a Salivation, which, he says there †, was the only Time he ever knew it produce such an Effect, though he had given it for above six Months together. And yet, a little farther ‡, very idly contradicts this, adding, it had produced the same Effect in himself, and others; *but then, that the Evacuation was beneficial and salutary, not to be called a Salivation.*

From this Effect it is justly deduced an excellent Pill; and is a Proof, that, like our old standing Preparations, (*Calomet. Merc. Dul. or Turbith.*) we may so judiciously mix it with purgative or sudorifick Ingredients, as to direct its Operation through the Intestines, or by the Pores, as we would have it a Cleanser or Alterative; and by the same Judgment may give its Escape through the Glands of the Mouth: *Where, after all that can be said of either, they will operate most effectually, and so Purpose.*

So far of the Pill or Mercury individuated: But as it happens to be interwoven in the late Controversies of the Good or Ill in swallowing it Crude, I cannot help taking so much Notice
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* Turner, p. 159. † Hosp. Surg. Vol. II. p. 40. ‡ Ibid. p. 86.

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of the Subject, as I apprehend may be useful : Dr. *Dover*, who is the most fashionable Physician on this Head, gives it ℥ss. ʒj. and in some Cases two Ounces (unmixed with any Thing) in a Day, for two Months together ; and this (according to his Certificates) in Gravel, Cholicks, Pains of the Side and Stomach, Reachings, Gout, Cramp, Palsy, &c. * and more particularly in the Asthma, where it is said to do Wonders.

I shall recite his own Words, or what I have heard from his Patients, in Confirmation of this, making occasional Remarks thereon, as they may serve to discover Truth. The Doctor says, (at p. 27.) *Whatever keeps the Lungs cool, is the only Way to cure Consumptions; and that he has of late experienced Crude Mercury to be the most beneficial Thing for the Lungs, taking ʒj every Morning : And though he speaks nor a Word of it in his Chapter of Asthma's, yet La Port's Certificate, and others, (p. 187.) and what is still more to the Purpose, Hukins's Case, as transmitted to Dr. Turner, seem a great Recommendation of it in this Distemper : But there are these Faults in both ; La Port was not perfectly cured, he says, but only easier in the Periodical Assaults, which he was also by moderating and regulating his Eating and Drinking ; and at the same Time in the Cure had added the Use of Bellost's Pill and Æthiop's Mineral. Hukins's Case is more particular, not*

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only

* *Legacy, p. 196. Edit. 12mo.*

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only for the Exactness of the *Ephemerides*, but its being published to the World by another Hand : We find there the periodical Fits very severe, beginning some Time before the vernal *Æquinox*, arising to its Height in Summer, and abating about *Michaelmas* ; this for five Years running ; and had been the Effect of Cold taken. In *January*, 1732-3, says the Relation, he began with ʒj. of Crude Mercury every Evening an Hour before Supper, and two or three before Bed-time ; and by *March* (in which Month for four Years past he had been, to Appearance, dying) he eat and drank his usual Diet, kept his Bed a Nights, and slept soundly ; which he could not do before at this Season, without danger of Suffocation ; became strong and active, going to his daily Labour * : But then it follows, that this poor Man's Case was taken from his own Mouth to this very *March*, 1732-3. at the End of which he relapsed into a very severe Fit, notwithstanding the Course of Mercury, with Remissions, (many particular Fits compassing the general one,) as usual ; and was not relieved to any Purpose worth heeding till the Fifth of *April*, that the Mercury which had been retained a long While came away in a large Stool : Then the Physician begins a Quicksilver Pill, (*Bellost's*, or very near it by its Operation,) and this raises a Salivation, † in which only, whatever Complication the Man's Disease might have,

* *Dr. Turner*, p. 200. † *ibid.* 203.

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have, he effectually found Relief. So that these Asthmatick Symptoms, for which Crude Mercury is celebrated, though we could not deny the temporary Relief received by some, yet such Patients, I imagine, are not always labouring under a distempered Lungs, seldom or never primarily: An ill Construction or Formation of the Part, a prone Position, Tumors, or Inflammations, on any of the Members or Parts touching upon, or bounding the Cavity of the Breast, particularly what hurts or convulses the *Diaphragma*, straightens its Capacity, or that of the *Aspera Arteria*, or hinders their full Expansion, (as in *Angina*, *Pleurisy*, &c.) increases the Blood's Motion or Viscidity, will more or less produce Asthmatick Symptoms; so will Flatulencies of the Stomach, the inverted or convulsive Motions of the Fibres of its Coats; or of those constituting the *Diaphragma*, or Dropsy, in either Cavity. Now, if the Distempered should labour under some or other of these Causes, the Properties of *Weight* and *Coldness* in Mercury might, in some measure, explicate the Cure, through an irritative Power, by means of the *Genus nervosum*; but that it ever passes into the Mass of Blood for this Purpose, or if it did, could effect so good an End, seems to me at present impossible. Dr. *Dover* does not attempt to explain how it gets into the Mass of Blood, nor its Operations when there, to the Purposes answered, producing neither the Facts, nor Manner how compassed; which, in a Medicine new in Practice, is a great Fault, and a Submission to the Publick, that nothing

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is to be trusted in it but what Experience and Trial alone can justify : Wherefore, to throw in my own Sentiments in the Dispute, I am of Opinion, notwithstanding what has been writ upon the Volatility and Penetrability of it, (impregnating boiled Water, and transpiring, it is said, through a Quill, Parchment, or Leather,) *that Crude Mercury swallowed exerts its Effect in a human Body by its Properties of Cold and Weight, and that only in the Channel it passes through.*

We see, that by grinding Mercury into indivisible Particles by manual Labour, as in the Ointment for Salivation, the *Aethiop's Mineral*, *Mercur. Alcalifat.* or Pill, will fit it for entering the Lacteals, and mixing with the Mass of Blood ; Fluxes having often arisen upon the regular Administration of them, and (what I must caution you) sometimes Tremor and Emaciations, Convulsion, and Giddiness, upon a Protraction or Irregularity of the Course, externally or internally used. I know a Person now, thrown into a convulsive Tremor, like an Ague, after a Course of *Aethiops*, (to about ℥xij.) the Fits not at regular Periods, like that ; the two first being at a Month's Distance, the second and third at a Week, and then two or three Days together ; the Cold and Trembling extremely great, as well as universal, and ending in violent Sweats.

Fuller, in his *Medicina Gymnastica*, gives this Account of himself ; That the outward Use of Mercury had brought Giddiness, and Convulsions in the Capillaries of his Eyes, his Fingers, and pectoral Muscles, with Shortness

ness of Breath, &c. both Proofs of its too intimately mixing this Way with our Constitution; yet, when it is taken in the Aggregate, there is a wide Difference, Quicksilver and Chyle seem as unfit Bodies for incorporating, as Iron and Clay; for, as *Helvetius* observes, nothing but Chyle, or similar to it, without a Prodigy, will pass the Lacteals: *It is like a Cloth dipped in Oil, says he, which will filtrate only that, though there be a Mixture of Wine.* To this we may add the mutual Attraction of their Particles, always incline them again to unite their Globules, in so capacious a Channel as the Intestines, where they have Room, much rather than pass the imperceptible Orifices of the Lacteals; which if they could do, would probably end more often unhappily, by bursting them, the Mesaraicks, and other tender Blood-Vessels, causing Hemorrhages, insuperable Stagnation, Inflammation, Gangrene, and Death. But what need we doubt of this, since both *Dr. Turner* and *Dover* acknowledge, it has, and may be taken every Day for Months together, (*Turner, p. 143.*) without either Good or Harm. That it has been collected by Stool, after a long Course, within a very small Quantity of what has been swallowed; and, above all, is always actually found in the Intestinal Passage upon Dissection. Where *Dr. Turner* observes (*p. 136.* against the Likelihood of its passing the Lacteals) that they thrust a Needle through divers Parts of the Intestine of a Birch, into which they had poured a Quantity of Crude Mercury; but that after a few Globules that followed the

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Needle,

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Needle, none came but on Pressure (and that somewhat hard) both above and below. Yet this Gentleman, whom I believe of great Veracity and Judgment, perplexes this Assertion, (p. 227.) by giving us the History of a Woman flung into a deep Salivation by taking about ℥ij. of Crude Mercury; and insinuates (just before) the same Accident of a Gentleman who had took ℥xviij. But as these Relations comes upon the Credit of others, and that the Woman (p. 151.) had taken *Mer. Alcalifat*. I must beg Leave to suspend my Belief for stronger Proof, if it were only for this additional Reason, That I find no more (of the Numbers that have taken it) thrown into the same Condition; a Casualty, which, though very rare, would entirely discredit its Use; the same I think also, if any Globules of it could be found in the Urine. Dr. Turner says he never heard of any of your Mercurialists that ever met it there; therefore, I presume, gives no Credit to the Attestations in the *Legacy*: For P. *Assention* (p. 196.) observed, besides a salutary Spitting, small Globules in the Sediment of his Urine. Ezekiel Wallis, Richard Freeman, &c. (p. 204.) are referred to for the same; *The Doctor making no doubt, but that if proper Glasses were used, Quicksilver might be seen in the Urine of almost every Person that takes it, in a greater or lesser Quantity.* But then, methinks, from so curious a Gentleman, so material a Point might have been assured from the Experience on himself, having taken Crude Mercury upward of forty-six Years, p. 201.

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When, therefore, there is the greatest Probability that Quicksilver swallowed undivided, never passes the Lacteals to mix with the Mass of Blood, it will be very difficult to solve how the Intentions (if real Cures) were answered in many Distempers of his Catalogue. * He asserts that the Ladies at *Smyrna* and the *Molucca* Islands in *India*, take it as a Remedy for Barrenness (ʒj. every Day for a Month or two.) In the Green-Sickness † he gives the Patient every Morning ʒi. for three Weeks, it opening all Obstructions, he says, and making a pure Balsam of the Blood.

In the Small-Pox ‡, Mr. *Curr* that had no Ptilism at the usual Time: He gave him Mercury; but that not answering, he purged him every Day till the Danger was over.

Gout and Gravel ** cured by taking Mercury: The Stomach continued tender after swallowing a Dose of ʒij. and a Return of some small Pains; but this I think not much to be heeded, in a Man that had been twenty Years out of Order.

In the Stone, he says, Please take to ʒj. of Quicksilver every Morning for a Month. Emaciations, Pains, and Numbness of the Extremities, ‖ went off twice, by taking ʒj. every Morning: The third Morning the Fingers and Toes tingled with Warmth, which had not been felt for many Weeks, and he had
lost

* *Dr. Dover's Legacy*, p. 47. † *Ibid.* p. 48. ‡ *Ibid.* p. 79. ** *Ibid.* p. 34. ‖ *Ibid.* p. 191.

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lost the Use of his Hands. Here also it cured a Horse of the Glanders, and a Lady of Pains at her Stomach. At *p.* 37. he recovered a Woman of seventy Years of Age in ten Days perfectly well, who had fell down with an entire Loss of Sense and Motion on one Side.

Scorbutick Swellings and Pains, (*p.* 188.) removed at taking $\mathfrak{z}$ j. every Morning for twelve or fourteen Days.

I say, I do not know by what Philosophy to explain how these or the like-recited Cures were performed, if the Mercury does not circulate with the Mass of Blood, to open Obstructions and scour the secretory Organs. We see, indeed, that a strong Vomit or Poison taken into the Stomach, in a little Space of Time will communicate the Convulsion begun there, to the most distant Parts. And again, any Refection taken in, after severe and long fasting, immediately enlivens and strengthens all the Parts, long before the Food can be distributed through the Body; and this by the Continuity of Life, whereby the Centre being touched, it irradiates to the Confines, perhaps, by means of the Nerves: The Plexus so large and numerous at the Mouth of the Stomach, and so sympathizes with the Head and Heart, that *Van Helmont* took it for the Seat of the Soul. But then Mercury, by all the Facts hitherto produced, has never been pretended to have this Penetrability or influential Power; the mutual Attraction of its Particles from their Ponderosity is superior; nor if it boiled in the Stomach, would it have
any

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any other Tendency or Direction than to itself, nor impart no more Virtue to the Chyle there, or in the smaller Intestines, than it does now to Water over a culinary Fire.

Since then the Operation of Crude Mercury, (at least what we yet know of it) is compassed by Weight and Coldness, and that only in the Channel it passes through, it is most likely, of any, to hit the Distempers of those particular Parts, and as the Bottom of the Stomach may have a Participation of the same Nerves, (the *Plexus nervosi* of the *Hypochondria* and *Mesenterium*.)

In *Vermicular Diseases* (p. 50.) *Hypochondriacism*, or to buy a Chopin of Ale, (as the Slaves do in *Hungary*.) it may be useful. In *Reachings* and *Nausea's* colical Pains and Diseases of the Stomach, it is not only commended by Dr. *Dover* to be taken ʒj. a Day, (in any Vehicle, exceeding all other Medicines,) but by Dr. *Turner*, in his *Historical Memoirs*; and by others I have heard it celebrated from their own Experience. In the *Volvulus* all agree upon its Usefulness; the Doctor says, only in Confirmation, (p. 98.) *That you need go no farther for the Cure of this fatal Disease, than to take ℥j. or ℥iſs. of Crude Mercury.*

This latter Enumeration, I say, is reconcilable to some Rules of Mechanism; the *Pondus*, as Dr. *Turner* expresses it, restraining the inverted Peristaltick Motion, or keeping down the Fund of the Ventricle, whose nervous Coat, in *Nausea's* or *Reachings*, got by Pain, Drunkenness, and the like, acquire this inverted Motion: To this might be added (if not

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not too light a Reason for so weighty a Medicine) its falling thump upon the Stomach in Swallowing. There is something similar to this in Mr. Hill's *History of Turkey*: An *English Merchant* getting a Cure there for the Gout by a Bastinado upon his lame Foot. A leaden Bullet, if objected to be as good a Remedy on this Foundation, would not answer the same Purpose; because it cannot so easily pass with the Contents of the Stomach, as Mercury, which is a Fluid: To convince in this, take the two following short Stories:

First, James Day, one of our Sailors, swallowed a Musket-Bullet accidentally, which neither Vomit nor Purge removed: It lay a Load upon his Stomach, with almost continual Uneasiness; and Nauseating till that Day Month, when in a Fit of Coughing he brought it up, and was immediately easy.

Second, Mr. May going to speak hastily while he was holding a leaden Ball in his Mouth, it slipped down, lay sore and uneasy at his Stomach, giving frequent Cholicks, and not removable with any Evacuation; but remitted, when grown more familiar to it with Time, till after nineteen Years it was voided in just the same Manner, by a Fit of Coughing.

This may suffice upon the Controvertists on the Usefulness of taking Crude Mercury, and the Possibility of its doing Good in some Cases: But when the Hazard of its doing so is compared with the real Injuries suffered from it, and those undeniable, there is no room to hesitate about the Danger, especially in a long Course and Retention; for when it comes to
accumulate

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accumulate, the Weight and Coldness redoubles ; which joined to the Motions of the Body, and Stops made by the Anfractuosities of the Guts, may produce great Mischiefs.

Dr. *Turner** reckons up *Tormina*, vomiting of Blood, voiding a great deal by Stool, very great Pains in all Parts of of the *Abdomen*, unusual Weight, and Uneasiness at the Stomach ; Head-ach, large Fluxes of clotted Blood ; and, to sum up all, a Mortification of the Intestines.

Mr. *Booth*, the Tragedian, to prevent the Return of an Intermitting Fever, by Dr. *D...*'s Advice on the Third of *May* began a Mercurial Course, and by the Eighth had taken ℥ij. within 3ij. at which Time he began to complain of a very great Pain on the Forepart of his Head, and as great in his Bowels, with an universal Uneasiness of his Body ; insomuch that he could not remain one Moment in the same Posture, had voided none of the Mercury till this Day. On the Ninth, Sir *Hans Sloane* being sent for, and finding the Passage bound up, prescribed a solutive Draught ; and that ineffectual, a purging Clyster. On the Tenth, being still costive, and the Symptoms increasing, ordered another purging Clyster, &c. but on this Day he died. On diluting the Fæces with Water, there was collected about ℥ss. of Mercury.

On opening his Body, and ripping up the *Rectum* and the other Intestines with a Pair of Scissars, there was found little Excrement ; but the whole inside Tract lined with Crude Mercury,

* Dr. *Turner*, p. 148, 151, 210, 214, 217, 269.

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Mercury, divided in Globules about the Bigness of Pins-Heads: The *Rectum* broke like Tinder, and sent forth a most cadaverous Stench. The others were not glazed over with Mercury, as had been said; for they were *as black as your Hat, and so rotten, they would not endure the least straining without breaking in Pieces.*

To this may be added what Dr. Turner says of an Iliacal Subject he dissected, who had swallowed; the Day before ℥ij . of Mercury; that he found the whole Mass, that had been taken, at the Obstacle, which was *mortified all round*; that endeavouring to draw the inverted Part out, it rent; *but whether to be imputed to the Mercury, or intense Degree of Inflammation, declines pronouncing.*

These I take to be the true and genuine, though not the constant Effects of swallowing much Quicksilver; what he instances of Blood from the Lungs by Vomit, from the Brain by the Nose, Inflammation of the *Tunica Adnata*, putrid Sloughs in the Mouth, and the like, remain with me, as yet, dubious Consequences.

From the Whole, if so obscure a Person might slide in his Advice about this modern Practice, Mercury should be never taken but *in Extremis*; as the Doctor observes in Mr. Curr's Case, (p. 79.) in violent convulsive Pains of the Somach or Intestines, and when other Means has failed: For if any Credit may be given to a Number of Complainants, it will relieve, and possibly, by the immediate Contact of its Weight and Coldness on the nervous Coat, by which Means it repels the
Spirits

Of the Venereal Disease. 257

Spirits, rioting in that particular Plexus of Nerves.

But then, when a Patient has felt this Ease, it would be judicious, I think, to be contented with the fewest Doses. The tragical Symptoms above mentioned were, no doubt, the Effect of Quicksilver; and, therefore, when it does not come away with the ordinary Stools in a continued Course, it is wise to take the first Alarm, and break off.



Prescripta

i Prescripta aliquot in



Prescripta aliquot in Usum
Classis.

Elect. Scorbutic.

℞ Elect. Lenitiv. ℥j. Crem. Tartar. ℥il.
Sps. Cochlear. q̄s. F. Elect. De quo sumat
Bolam omni mane & Vespere pro uno
mense.

Multum conducit (labore corporis) ad cura-
tionem hujus morbi.

Elect. Dysenteric.

℞ Conf. Rosar. rub. ℥iv. Diascord. ℥j. Bol.
Armen. Pul. Sang. Dracon. Nucis Moschat
Pul. a ℥j. Cinnam. bene Pulverifat. ℥ij.
Syr. B. Meconio q̄s. F. Electnarium.

Elect. Febrifug.

℞ Pul. Cortic. Pern. ℥ij. Sal. Absynth. ℥ij.
Sal. Tartar. ℥j. cum Syr. Caryophill F.
Elect.

Elect.

Usum Classis.

ii

Elect. Psoric.

R *Ethiops Mineral* ℥j. *Asim. Diaphor.*
℥ij. *Cons. Cynosbat.* ℥ss. *sumat quantis.*
nucis majoris omni mane & vespere.

Conf. Alexiphar.

R *Pul. e chel. Cancror. Simpl.* ℥ss. *Ther.*
Andromach. Conf. Lujule a ℥ij. *Syr. Li-*
mon. q.s. F. confect. in Vase lino obturato
servanda.

Mixtur. Anti. Emetic.

R *Aq. Mensb. S.* ℥ij. *Vin. Alb. cum Mensb.*
impregnat. ℥ss. Sal. Absynth. ℥j. *Syr. Li-*
mon. de Mecon. a ℥ij. F. Haust.

Mixtur. Febrifug.

R *Aq. Hord.* ℥ij. *Aq. Epidem.* ℥ss. *Sal.*
Absynth. ℥j. *Spt. Pinjol. g. x. sumend.*
in Lecto, hora una ante expectatum Pa-
roxysmi, accessum.

Bolus Febrifug.

R *Corr. Peruvian. Subtiliss. Pulverizat.* ℥j.
Ther. Androm. ℥j. *Spt. Sal. Armoniac.*
q.s. F. Bolus N^o 2. quorum unus sumend.
Horis duabus ante paroxysmum in Lecto,
ad sudorem provocand. Intio paroxysmi al-
terum, continuand. ad duas vices Remedi-
um efficacissimum merito habetur.

Julap.

Prescripta aliquot in

Julap. Analoptic.

℞ Aq. Hord. ℥ij. Aq. Epidemic. Tber. a
℥iij. Syr. Caryoph. ℥ij. M. F. Julap. Con-
cedi potest ad Cochlear iij. quartis vel sextis
Horis.

Infusio Pectoralis.

℞ Sac. Liguor. ℥j. Sal. Tartar ℥ij. Aq.
Hord. ℥ij. Infund. simul in Balneo Ma-
ria.

Hauft. Paregoric.

℞ Aq. Font. ℥ij. Aq. Tber. ℥l. Syr. de
Mascow. ℥ij. L. Liquid. g. x. M.

Hauft. Traumatic.

℞ Cerevis. Prussia ℥iij. Syr. Sympbisi Croci,
a ℥l. Sperm. Cati ℥j. M.
℞ Aq. Hord. ℥iij. Sperm. Cati ℥j. Aq. Tber.
℥l. M.

Pal. Traumatic.

℞ Terr. sigillat. Lap. Hibern. Sang. Dra-
con. Mummia. Sperm. Cati. a ℥j. Pul.
Rhabarb. ℥l. M. divid. in Chartulas. iij.
quarum una sumend. 6a quaque-hora in-
dauit postea. vel Cerevisie seu in forma Boli
cum Tber. Venet.

Decoct. Amarum.

℞ Sem. Cardui. Rad. Gentian. Incis. enula
Campan. a ℥ij. summitat. Centaur. minor.
℞j.

Usum Classis.

16

℞. Flor. Chamamel. q.s. coquant. in Aq.
Font. ℥iv. ad ℥iij.

Decoct. Solutiv. commun.

℞. Rhei Elect. Incis. ℥℥. Fol. Senna ℥iij.
Senn. Coriand. contus. Fenic. dulcis a ℥℥.
Crem. Tartar. ℥vj. coquant. parum simul
in Aq. Font. ℥iv. Colatura edulcoretur pro
re nata Syr. & Spin.

Suppositor Eccoprotic.

℞. Pul. Aloes Hieræ Picra. vel alumin. q.s.
Albuminis ovor M. ad aptam Consisten-
tiam.

Pil. Panchymag.

℞. Mer. Dul. ℥ij. Pil. ex duobus ℥iij. Radii
Rez. Jalap. Crem. Tartar. a ℥ij. Ol. Anisi
℥is. cum q.s. Syr. E. Spin. F. Massa. Pil.
Dof. ℥j. ad ℥℥.

Enema Commun.

℞. Aq. Font. ℥x. Mell. Op. ℥j. Sal. Commun.
℥℥. misceantur simul bene ignis calore.
℞. Aq. Marin. ℥x. Ol. Chamamel ℥j. Sacchar.
Nig. ℥ij. M.

Enema Terebinth.

℞. Urin. human. recent. ℥xij. Terebinth. ve-
net (cum vitell. Ovor M.) ℥vj.

Collyrium. Commun.

℞. Aq. Font. ℥iv. Vitriol Alb. gr. xij.

B

Prescripta aliquot in

℞ Aq. Ros. ℥iij. Troch. alb. Rbas. ℥i.

Gargarisma Commun.

℞ Aq. Font. ℥℥. Mell. Rosar. ℥i. Sp. Vitriol.
g. xx. M.

Ol. Epulotic.

℞ Vitriol. Alb. ℥ij. Vitriol. Roman. Alumin.
a ℥j. solvantur & coquantur in Oleo & Aq.
Font. a ℥℥. ad Consumption. ultimi.

Ung. Scorbatic.

℞ Ung. Martiat. Dialthe a ℥viij. Ol. Hyperic.
Terebinth. a ℥j. M. F. Liniment.

Ung. Cata. Psoras.

℞ U. Popul. Axung. Porcin. a ℥ij. Flos. Sulphur.
℥℥. Mer. sublimat ℥℥. Ol. Tereb. q s.
F. Ung. Malle.

Ung. Digestiv.

℞ Linim. Arcei. U. Basilic. a ℥ij. Ol. Tereb.
℥ij. Hyperic. Linim. a ℥iv.

℞ U. Basilic. Liniment. a ℥iv. Ol. Hyperic.
℥ij.

Ung. Desiccativ.

℞ U. Desicc. rub. Diapomphol. Basilic. a
℥j. M.

Ung. Detergent.

℞ U. Digestiv. Terebinth. venet. p. a. M.

Ung.

Usum Classis.

vi

Ung. Pleuritic.

℞ U. Dialthe Ol. Tereb. a. ℥j. Camphor. ℥℥.
M. Spirituosa unctuosius admista multo poten-
tius mederi possunt Dolores quam per se sola
aspirata.

Restrictiva Maxim.

℞ Albumin. Ovor. N^o 2. Acetum vini. ℥ij.
Pul. Resfringens q. s.

Ceratum Commun.

℞ Empl. de Minio Paracels. a p. a.

Empl. Defensativ.

℞ Empl. Diapalm. ℥iv. Ol. Rosar. ℥℥.
Pul. Boli. ℥j. M. & extende super Alu-
tam.

Empl. Anodynum.

℞ Empl. Saponis ℥viiij. Oxyroc. Picis Bur-
gund. ℥ij. Qui salve. ℥ij. liquefiant omnia
simul in Melle.

Cataplasmata Resolvens.

℞ Mica Panis. Farin. Fagar. p. a. coquan-
tur in Aqua Font. q. s. ad Consistentiam
aptam deinde adde Ol. Rosar. Cham. a Pa-
rum.

Pro Fotu.

℞ Ex quibuscumque Herbis sequent. Absynth.
Origan. Thym. Centaur. Betonic. Salvia.
Hy-

vii Prescripta aliquot, &c.

*Hyperic. Menth. Rosmarin. Lavend. Abre-
tan. Sambuc. M. iv.*

*Ex hisce floribus, Balaustior. Rosar. Rab.
Cham. Melilot. p. iv. ex seminibus quatuor
calid. major p. ij. coquantur omnia in Lixivio
Cong. iij. colatur. adde Spt. Vini q.s.*

*Usurpetur cum Stupbis Laveis calidissime
intinctis & expressis, in Spiritibus maceratur,
adjes Spt. Sal Armoniac. ʒj. Camphor. ʒi.*

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APPENDIX:

Containing

Physical Observations

ON THE

HEAT, MOISTURE,

AND

DENSITY of the AIR

ON THE

Coast of GUINEY:

THE

COLOUR of the *Natives* ;

THE

SICKNESSES which They,

And the

EUROPEANS Trading thither,

are subject to;

With a **METHOD** of CURE.

LONDON:

Printed for C. WARD, and R. CHANDLER.

MDCCLXXXIV.



OBSERVATIONS

ON THE Coast of GUINNEY.

whole Fortune may carry them in
not unworthy the Notice of those
digested the following Observations,
Months on the Coast of Guinney, I
In a Ship stand above twelve



the same Trade.
The Coast of Guinney lying
to near the Equator, must of
could be very hot; but there are
two Advantages met with there,
which are a Sort of Counterpoise to the Sun's
Vicinity, and makes it less troublesome or
hurtful, than one would expect, viz. First, The
Breeces from Land or Sea, that constantly pass
upon us, (Calms being rare, and of short Continuance;) and, Secondly, The Thickness of the
Air, the Horizon being always hazy, which
by obstructing the Rays of the Sun, Morning
and Evening, subtract considerably from the
Time he is in that Hemisphere; and although

OBSERVATIONS

ON THE

Coast of GUINEY.

IN a Ship station'd above twelve Months on the Coast of *Guiney*, I digested the following Observations, not unworthy the Notice of those whose Fortune may carry them in the same Tract.

The Coast of *Guiney* lying so near the *Aequator*, must of course be very hot; but there are two Advantages met with there, which are a Sort of Counterpoize to the Sun's Vicinity, and makes it less troublesome or hurtful, than one would expect, viz. First, *The Breezes from Land or Sea, that constantly fan upon us*, (Calms being rare, and of short Continuance;) and, Secondly, *The Thickness of the Air*, the Horizon being always hazy, which, by obstructing the Rays of the Sun, Morning and Evening, substract considerably from the Time he is in that Hemisphere; and although

N 2 he

Observations on the

he comes vertical. Clouds do at most Seasons interpose at his different Altitudes, and break off the Brightness of his Beams, particularly at what we call the Rainy Seasons, (Seasons which revolve with the Sun all down the Coast, and have their constant Returns in the different Parts of it,) making the *Æquinoctial* cooler for the Time, than *England* in *March*.

This Moisture and Density of the Air dense the Air, so visible in the Mist and moist. and Haziness of the Horizon, is such, as to moulder Cloaths, and rust your Pocket-Instruments, Swords, or any kind of Steel Implements, in a Day's Time; no Country being more noted for this Particular, nor more deservedly: (nay, the same Elevation of Voice, is less distinct and clear, than in any other Country I know:.) The Reason of this Mistiness perhaps may be the Lowness of the Lands, and the Multitude of Woods and Trees upon them, with some great, but many small Rivers washing through them, which supply these aqueous Vapours, and make the Medium thick. And this seems evident, because, as you move from Shore a few Leagues, this Haziness is lost, as all Ships experience; and also because no Dews fall (at least it is extremely rare) a League from Shore, any where along the whole Coast, yet are very great every where on Land. It is for this Reason, and because the Country is overspread with Woods and Mangroves, not only obstructing the Course of the Winds, and rendering it far more sultry and hot, but stinking and offensive; and also, because

to Certainly nothing contributes more to the Conservation of Health, than breathing in a wholesome Air, and feeding in one regular and uniform Manner: These are the necessary Materials of our Substance, and with which we maintain a constant Commerce; Errors, therefore, herein will, in a shorter or longer Space of Time, as our Constitution is more or less fitted to resist, shew themselves in various Distempers. And although we may shun the French and Nonnomen on Store, arising from their piquant and unwholesome Way of Feeding, we may yet create to ourselves the same or like Errors on Board.

The Air is very much confined between the Decks of a Ship; the Ports that would carry off the bad, and bring us fresh Air, being obliged for Safety to be shut, and great Numbers of Men to lodge there. The *Effluvia*'s from Perspiration, and their Breathing together, will load the Air with corrupting Particles, and as it fills with such Heat, weakens its Spring and Elasticity; and by that Means renders it unfit for the Winds and rarefies it far more than it is in the open Air.

4 Observations on the

fit for receiving again: Add to this the Fifth and Sixth, bred from such a Number, by Neglect and Idleness, the Steams arising thence and putrefying the Air, with which they so constantly correspond; all these together, in Time shew their Effects. From what does Plague and Pestilence, epidemical and contagious Distempers, proceed, but chiefly from a Disregard in this Particular? they reigning, or at least arising first in populous Cities, and in Summer-*Time*, when Stink and Putrefaction most abound.

This Observation should teach us Lessons of Cleanliness, to wash and clean the Ship between Decks often, to keep the Men so, and to let them have as free and frequent Communication with the fresh Air, (by opening the Ports,) as may be consistent with Safety, and their other Affairs, Points too much overlooked and disregarded, though of the greatest Consequence to preserve a Ship's Company on a Voyage.

A stagnant
Air unwhol-
some.

Another Remark may be drawn from this general Doctrine against the superstitious Humours or Conceitedness of some Men, who will be as sollicitous in these excessive hot Countries, of guarding against Cold, as if it were in the same Climate with *Norway*; and upon any Indisposition, presently exclude themselves from the Benefit of fresh Air, keeping their Cabins so close, as if they feared a Communication with it of the utmost Danger; a Circumstance that the found-
est

Constitution cannot abide long, without languors and great Uneasiness. And the Reason seems plain, from the Observation above; there is only this Difference; One Man here, in a confined and close Apartment, gives the same ill Disposition to the Air, in a longer Time, as I have said Numbers do (though a little more at large) in the Body of the Ship; for those corrupting Effluvia that continually pass from him by Breathing and Perspiration, mix at length with the stagnant Air in the Cabin with noxious Miasms, unfit to be received again; and I have more than once seen the Proof of this, in such, who obstinately persisting in a Refusal of what would have been their greatest Benefit (Fresh Air,) have passed off in languishing and perpetual Sweats.

Another unhappy Effect I fear of this too great Warmth and ill Management in hot Countries, is that Disorder, called the Dry Gripes, and its paralytick Consequences.

Those, who I have known thus tormented, have been first very much weakened and dispirited by the silly Practice of promoting large and partial Sweats; whereby Cold is more prevalent in the Evenings, to the Constriction of the Pores, and sooner excites Disorders in the lower Belly, than elsewhere, because Parts not accustomed to be exposed; I rather impute it to this, than any pernicious Quality in the Air, or of strong Drinks and Acids swallowed, because any peculiar Unwholesomeness in the for-

mer, would make the Mischief more general; nor does excessive Drinking, or Acids seem likely, either of Rum or Limes, because these are of universal Use with Seamen, in all Climates, without such Effect, unless we will suppose that Weakness and Loss of Appetite lends an accidental Help to those few who are seized with it.

But to return: There is still a **too great Heat** farther Inconvenience, attends or Moisture in **Heat and Moisture**, in such warm Climates.

Countries, as **Gainey** and the **West Indies**, and contributes to the Sickness of a Ship's Company, and that is, their being productive of infinite Numbers of Insects (*ab his orientur cuncta dolores*.) Ants especially, who raise Hills in **Africa** to eight or ten Foot high, Garisons that will devour a dead Sheep in a Night's Time: Of these we get Variety, and numberless Commonwealths on Board with our Wood, as also Cockroaches, Maggots, and Flies of various Species.

I shall not pretend any of these to be the malignant Species that blight and destroy Plants, or effect Murrain in Cattle, or Plague among Men; but this I may be confident in, that by nesting themselves in infinite Numbers among dry Provisions, they prey on the Heart and Substance of it, and so make them less Salutary and fit for Nutriment. Salt and Heat does the same by wet Provisions.

Having

Having premised thus much, I come to account for the Sickness and Mortality of our Ship's Company at the Island of Princes, July 1722. where we arrived to clean and refit, all in good Health, although we had been full four Months on the Coast of Africa; and is a corroborating Circumstance, that new Provisions, and want of Oportunity to debauch on Shore, are two main Preservatives of Seamen's Health.

The Sickness of our Men accounted for in particular.

I might here first take Notice, that the sudden Phrenzies, Convulsions, and colliquative Sweats, that so soon terminated some of their Lives, was suspected, and with some Reason, to proceed from eating wild Manyocoes and Yamou Roots, the Growth of the Island; which, when cultivated, and duly prepared, are a common Food of the Natives, but otherways, highly noxious and unwholesome: I say, this might be farther insisted on, but as the Majority plainly became infected from more explicable Causes, I shall endeavour to point them out, the Symptoms attending, and my Method of Proceeding.

First, Of the Causes. The Condition of cleaning Ships at this Island, are unsuitable to English Constitutions, for we are put under a Necessity of building Fents, and employing half our Men on Shore, for their Security, and for the Work that is wanted at them; whereby they are more at their own Wills and Disposals, than (without such a Necessity) it is proper

Of the Causes.

Observations on The

proper they should ever be contented with, being ungovernable in their Actions and Appetites, suffering from the Debility and Irregularities of the Negroes, and debauching their Wives, (and excepting a very few, most irregular in their Way of Living, eating and drinking whatever comes in their Way, the Produce of the Country,) without any Enquiry how proper or wholesome for Food, or having any Regard to Custom and Manner of Living.

Another Cause, is the extraordinary Heat of the Sun, (now in the Zenith, more blazing, and troublesome,) which the Men are forced to work in, and for a longer Time every Day on such Occasions as Cleaning. These heats high, or on the Shore at the Mills, surpass most at Sea, not only on Account of the Earth's stronger Radiation, but also from surrounding Woods and Hills, that stop the force of Winds and refreshing Breezes.

They are still more offensive, in that the Setting Suns are succeeded with a Chilliness in the Air, filled with aqueous Vapours, which, condensing very fast by the Interruption the Hills give to their Motion, fall every Evening at the Shore, in cold and prodigious Dews, sufficient in a few Hours to wet all the Beds through a double Tent.

And Intoxications. Lastly, these alternate Heats and Dews are more hurtful to Seamen, from their Irregularities of Life. Every Day's Labour must be recruited: And this they do with Palm-Wines, (plentiful on this

this Island and the whole Coast,) although a natural Distillation from the Tree does (without fermenting,) become intoxicating, in large Quantities. And what is more, they frequently lay down in these Inebriations, exposed to the Chills and Dews of the Night, whence a sudden Check is given to Perspiration, at a Time it is most wanted, and consequently Fevers, more or less malignant, are brought on as their preceding Coma has made those other aforementioned operating Causes, more or less powerful.

Symptoms. The Symptom generally begins with a violent Pain and Dizziness of the Head, Nausea, Vomiting, and Restlessness. After the first Day, the Patient, that was dry and absorbing, falls into excessive Sweats; the Complaints of which is: Faintness, and sudden diminution of Strength, an insupportable Thirst, and involuntary Urining, the Pulse neither high nor quick, but, altering on light Occasions. In the Progress came on either Delirium, Convulsions, and Speechlessness, or sometimes a Lethargy; and the former they commonly expired at four or five Days End, with the latter, sometimes a Day or two longer.

A few Exceptions may be made to this general Rule, of some who languished four-teen or more Days; but then it was, not the malignant epidemical Fever, but intermitting, and occasioned, as I hinted before, from a superfluous Humor of the Liver better than ordinary, how to avoid the Evil of a hot Country: Some of these affected Gentlemen, I have seen faint,

rather than take a Glass to inflame their Blood; and wear Flannel, and two or three Coats, to resist the Coldness of the Air, that had me, seemed more like the Steam of a hot Oven; yet such kept their Senses entire, and (I may truly say of them, when they died, that they were dissolved.

The Natives necessarily bred from a great Number of Sick, in a Ship seldom washed or cleaned, help'd to spread the Infection and Danger, aggravating the Symptoms, and at length in a Manner, disabled us from carrying on the Work required to equip us for the Sea again; where, in my Opinion, rested our best Hopes of Recovery. The present Comfort we had of regaining such a Condition, was the salubrious and healthful State of the Islanders at this Time, who by Temperance (natural to all the Signior Countries) keep off many Evils, and is the best Physick for all Climates.

Thirdly, My Method of Proceeding.

The Method of Proceeding, as it respected the Healthy and the Sick, Prevention of Recovery.

To preserve those who yet continued in Health, we separated the Ship entirely to their Use, and moved the Sick on Shore to the best Houses and Conveniences that could be hired, washed the Decks every Day, did not suffer them to work in the Heat of the Sun, (excessive under the Hills, from ten to four in the Afternoon;) nor to lay at the Tents, avoiding by that the Opportunities of Irregularity, and the Dampness and Dews they became exposed to afterwards.

The

110 The Sick had yet this Unhappiness, that having destroyed their Healths at the Coast, or at home they had, in their Cloaths, which they had battered for Drink and Bawbles among the Negro Servants, they were now destitute, having neither Bedding left, nor so much as a Shift to cover Shame, empty Hammocks being their Lodging, and the Rocks their covering, a Misfortune that would, in my humble Opinion, become the Wisdom of the Admiralty to provide against. The Commanders of French Ships of War, have always contingent Money advanced, and by this means the Means of Necessaries and fresh Provisions lodged with them for the Sick, where ever they come, which seems of absolute Necessity to remove Pains, to administer that Comfort which the Poverty and Obedience Sailors are under, disables them from doing to themselves. This dispensed frugally would be of inconsiderable Charge to a Government, and with Strangers exemplify a Christian Concern for our Brethren.

111 I began the Cure with Emetics, as the best Foundation, I thought, in Fevers from Intemperance, and found them so far

The Cure,
how attempted.

good, as to procure a little transient Ease and Rest, and so seemingly better for it the following Day; yet at Night Fever and Head-ach would return with greater Violence, and break off in some lucid Interval again in the Mornings, at which Seasons of Remission (chiefly) we bled them in the Foot three or four Times, perhaps in eight and forty Hours, according to the Humour and Practise of the Portuguese, who,

as they presume themselves best Judges in the Country Distemper, build their Cure entirely on it, and repeat it much oftner than I imagined after this Operation. *Tinct. Serp.* as an Astringent and Sudorific both, would best answer to these Symptoms, by expelling in the Way, to which Nature seemed to have its Tendency.

When the Patient was found approaching to a *Peripneumonia*, I tried the *Tinct. Serp.* *3ij. Aq. Camph.* *H.*

3ij. F. Hauss. These Prescriptions were accompanied with other of these Symptoms.

Or, *Be. Lap. Cons. Tern. & 3ij. Aq. Camph.*

Cyath. q. s. F. Bolus. I try'd others with the same Effect.

But was mistaken: As they immediately lost

all Appetite, those large and perpetual Discharges by the Pores emptied the Vessels, and

and hurried on extreme Languour, Faintness

and Convulsions, dying in three Days, *q. s. Aq. Camph.*

Inanitionem nimiam producit. Causa Convul-

sionis fieri. With others again, I try'd *Jolaps, Volatile*

Droops, and other Cardiacs. The last Symptoms

was in most of them Convulsions. *Be. Vin. Alb. Aq. Farn. & 3ij. Aq. Camph.*

Ferr. Sacchar. Alb. q. s. very high reduced the Patient to a

Be. Spt. Sal. Vol. 3ij. Lependul. 3ij. Ol.

Caryophill. g. x. hujus infusur. 3ij. Aq.

in Aq. Flor. vel in Cochlear. Tulap sequent.

bis in die. of Living.

We found and advantage by this to our well

Be. Aq. Flor. 3ij. Tinct. Croc. Aq. Epi-

dem. a 3ij. Margar. 3j. Sacchar. Alb. q. s.

To

To the Soles of the Feet, vappled
Burgundy Pitch, or Caputiale Plaster
spread on Leather, embrocating them
and the Palms with some Liniment
made with Tinct. of Castor, or Oil of
To the Belly, perhaps a Plaster of
Gamboge with Oil of Almonds.

When the Patient was found approaching
either to a Delirium or Stupor, (one or o-
ther of these Symptoms certainly ensuing,) then
these Prescriptions were accompanied with
Blisters both to the Arms and Legs.

I try'd others with resacous Powders, or
the Cortex, and a strong Hartshorn Drink,
in hopes to tie up so loose a Texture and
Compages of the Blood, and prevent the Ex-
pence of Spirits in such copious Sweats: But
all equally unsuccessful; for survived the In-
fection above six Days; the excessive Heat of
the Climate, and an inextinguishable Thirst to
such a predisposed Disposition of the Blood,
quickly evaporating both Strength and Spirits:
The last Symptom, and sure Fore-runner of
Death, was, in most of them, Convulsions.

This unhappy Sickness and Mortality had
very nigh reduced the Ships to a Necessity of
waiting a Supply of Men from England; but
as such a Resignation seemed a melancholy
Remedy in remote Parts, I rather advised the
pushing to Sea, for a Change of Air and Way
of Living.

We soon found an Advantage by this to our well
Men, the epidemical Rage lessening in propor-
tion to the Time of leaving those enumerated
Causes.

Causes of Infection, and enjoying a cooler and more salubrious Air.

For those few who had conquered the Severity of the Fever, and were weak, we were still perplexed: As the Wine and the few Surgeon's Necessaries, provided for such Occasions, were all long ago expended, there was not only a bare Want of them to complain of, but the absolute Necessity of resorting to the Ship's Victualling (bad in Kind) for supporting Life, and they in weak Conditions, we found, had this melancholy Consequence, of inducing a feverish Heat and Thirst, and giving Birth to Fluxes; so that what the one spared, the other destroyed.

Fluxes took their Rise here from Poverty of the Blood, bad Diet, Nastiness, and an infectious Air consequent thereto, and necessarily bred from narrow and close Confinement.

They were distinguished into Diarrhea's and Dysenteria's: *Diarrhea alvi laxitas, Dysenteria est alvi cruentia ac purulenta, Dejectio a materia acri Intestina cadente* (Baglivi.)

The Intentions of Cure seem common, viz. To embue the Blood with Restoratives; to allay the painful Sense of the nervous Fibres with Opiates; and to shut the Mouths of the Vessels, or heal their Erosions with Stypticks and Astringents.

Evacuations always precede, not as they do immediately answer to either of these Intentions, as that they fit the Body for receiving Advantages by Opiates and Astringents.

For

Case of Guiney.

For an Emetick, R Pul. Ipecacuan. ʒi. ʒij.
Oxymell. Scillitic. q. s. F. bolus.

A Purge, R Pul. Subtiliss. Rhabarb. ʒij.
Form. Holimel. in Vbanfale. sumend. quad.

After these Evacuants, I continued the first
Complainants to Dr. Moreau's Electuary, in
the Dose and Manner directed, and found
some Success: That expended; I kept others
to Dr. Corbarn's, and found it did no Harm.
Both finished, I made up as follows.

R Terra Sigillat. Bol. Armen. ʒj. ʒij.
Granat. Flor. balaustror. ʒj. Conf. Rosat.
ʒij. Tereb. q. s. P. Elect. sumend. quan-
titat. nutis quarta quaq; Hora superob.
Plant. Detoc. Alb.

With others, a Bolus of Diacordium alone
every Night, for a small Pill of Laudanum
rolled into a Dose of the Electuary. Their
ordinary Drink of Hart's-Horn.

R CCO. ʒij. Cinnamon. contus. G. Arabia.
ʒij. Cora. Granat. ʒij. Quercil. ʒij.
Ap. Fend. ʒij. Coda. ʒij. Serbie. ʒij. Conf.

In those Dysenterical, I breathed also a Vein
now and then, and administered Colicel,
finishing with the following, which I recom-
mend as a Medicine of no small Efficacy.

R Elect. Fracastor. ʒij. Allum. Commut. ʒij.
Laud. liq. gutt. x. Marm. ʒij. ʒij.
sumend.

From

From the Process (though not attended at this particular Season with much Success) may be deduced a useful Observation or two.

First, That where the Causes producing Fluxes irremediably subsist, (the Case of Ships in foreign warm Climates,) there is little hopes of Success; want of Diet, and a bad Air, are too great Impediments for Medicines to contend with, and render ineffectual the best Prescriptions. The eroding Particles, where we have no healing Nutriment, acquire greater Strength, and the Flux becomes habitual, admitting then only Palliatives, (*i. e.* Opiates,) which give Respite, indeed, but of little Consolation.

Secondly, Astringent Electuaries have their Efficacy from the Quantity of Opium administered in them; and those recoverable, soon find no Effect after Evacuations; if not, they lose of their Virtue, by the Frequency of Repetitions, the Stomach palls and nauseates, and then of Course the Patient proportionably emaciates till Death.

And, *lastly*, from experienced Want, I would recommend a triple Quantity of some Medicines usually put up for Sea-Service, *viz.*

The Cortex, Rad. Ipecacuan. & Rhubarb, Opiates, *My. Cinnam.* & *UCC.* Ther. Venet. Ellett. Fracastor. and Antihysterick Electuaries, to be used in a manner being confined to them, and no Hospitals to lessen the Expence.

I shall conclude with some Notes on the Distempers of the Natives of Africa.

The

The Negroes are a People troubled with few of the acute or chronick Distempers of the *The Negro Distempers.* *Europeans*, owing principally, I think, to a happy Want and Ignorance of luxurious Living, feeding, for the most Part; on Grain, Herbs, Roots, and Fruits, bathing sometimes; and all constantly anointing with Palm-Oil, or Tallow, which only, as it is an Exercise, does, with a little Fisting, Travelling, and Dancing, (their chief Amusements,) expel easily the Recrements of such Food, and contributes to the better Health and Longevity of the Coast-Negroes, which we must distinguish as abundantly more sprightly and active than the Inland Natives, (chiefly meant here, because of them, the Bulk of Carriages consist.) They have been totally destitute of this *European* Correspondence that has mended the others, and are to Appearance but a few Degrees in Knowledge above Beasts, many of them, so *Leward*, imagining they are bought to fatten up for Food.

From *Sassas* River, windward, many of the Negroes have large *Exanthematæ* through the Ignorance of Midwifry; and those of *Whydah* (where the chief Slave Trade is) are more subject to Small-Pox and sore Eyes.

This I have thought fit to premise in general. The Distempers Four peculiar I design to speak to, as more to Negroes. properly their own, are the *Measles*, *Distemper*, *the Cragra*, *the Taw*, and *the Chicooes*: Of each briefly. The

The Word us'd by the Negroes for Worms bred in the Ears.

The Sleepy Distemper (common among the Negroes) gives no other previous Notice, than a Want of Appetite two or three Days before: Their Sleeps are sound, and Sense of Feeling very little; for pulling, grabbing, or whipping, will scarce stir up Sense and Power enough to move; and the Moment you cease beating, the Smart is forgot, and down they fall again into a State of Insensibility, driving constantly from the Mouth, as if in a deep Sleep, breath slowly, but not unequally, nor fast.

Young People are more subject to it than the Old; and the Judgment generally pronounces it is Death, the Prognostick seldom falling. If now and then one of them recovers, he certainly loses the little Reason he had, and turns Idiot.

In searching for the Cause of this Distemper, it will be necessary to repeat what I have above observed, That the Bulk of Slave Caravans mostly consist of Country People, as distinguished from the Coast People; and if the principal Way of Supply be considered. At *Ukadam* more Slaves are bought, than on the whole Coast besides. And why? The King of that Country, and his next Neighbours understand Sovereignty better than others, and often make War, (as they call it) to bring in whole Villages of those more simple Creatures inland, to be sold at Market, and exchanged for the tempting Commodities of Europe, that they are fond and mad after.

On

On the rest of the Coast, there are trading Towns disposed up and down, under the Direction of *Cabillers*, or chief Men, who, as their Power is weaker and more controlable, export fewer Slaves; and those they do, come mostly by stealing; for they go armed into the Country, and seize those defenceless Creatures, a few at a Time, and expose them to Sale to the next Merchant Ship that touches in their Road.

To return, the immediate Cause of this deadly Sleepiness in the Slaves, is evidently a Super-abundance of Phlegm, or Serum, extravasated in the Brain, which obstructs the Irradiation of the Nerves; but what the procatarick Causes are, that exert to this Production, eclipsing the Light of the Senses, is not so easily assigned.

We find sometimes in Europe that Enormities in the Non-Naturals, Surfeiting and Drunkenness do gradually, as Age and Custom advance, weaken the Tone of the Brain, to the Admission of Serous and excrementitious Humours, inducing Sleepiness, &c. But here the Case is different, they being young People that are generally afflicted, and who have been destitute of the Means of Surfeiting.

I shall ascribe the Cause to catching Cold, and their Immaturity; to Diet and Way of Living; and to the natural Weakness of their Brain; some or all of these Causes co-operating to it.

The Procatarick Causes.

First,

First, In Ennervation, or Childhood, it is a common and true Observation, that more of Phlegm and recrementitious Humors is bred, than in Manhood; because the Fibres, and consequently the Faculties resulting from their Constitution, have not attained their due Spring and Perfection; and it is only supposing the Africans continue longer Children than the Europeans.

Secondly, Promoted here by their Daily Way of Living. At Home it is mostly by Roots, Fruits, and Herbage, gradually decreasing such as are wild and unseasoned, which together with the intolerable Heat of the Sun, weakening the concoctive Faculty, together with their Inactivity, renders a very recrementitious Nutriment: Their Indolence is such, (when shipped on Board for Slaves) as to be entirely dispassionate at parting with their Children, Friends, and Country, and are scarcely touched with any other Sense or Appetite than that of Hunger; and even in this want of Custom or Instinct, they cannot distinguish proper Food, nor know when to leave off, voraciously eating, though victuals be never so dirty, ugly, and whether the Flesh be raw or dressed, whether of the Goat or a Squirrel; a Practice which may sometime by overstretching the Fibres of the Stomach, occasion Crudity and Indigestion. By their Sloth and Idleness the Blood becomes more depauperated; and those recrementitious Humors bred from it, that Exercise would throw off through the proper secretory Organs,

are

are here disposed towards the weakest Part, which in the Generality of Negroes Staves take to be the Brain.

Thirdly, *The natural Weakness of the Brain*. I am apt to think the principal Cause of this Distemper. Doubtless that Part gains Strength by Exercise, &c. by the Employment of our rational Faculties; as well as the Muscles and external Fibres of the Body by Labour; and since the Africans are hereditarily ignorant, destitute of all Art and Science, or any mechanical Knowledge to exercise the Brain, it consequently grows weaker in its inward Struts and Ropes; and falls together with the Judgment and Passions.

The Employment of the Soul does not only in Metaphor, but in Reality, help to strengthen the Brain; as that again, the Condition of Mortality by the Firmness of its Texture, and Goodness of Disposition, does the Intellectual Faculties. This is obvious in the clear, wakeful, and unclouded Understandings of Men of Learning and Genius, compared with the Stupid and Ignorant, in whom the Soul, &c. its Operations, and the Brain are reciprocally found strong or weak. Where Ignorance and Stupidity reign, therefore, and vulgar Sciences, or Mechanics are planted for exercising the Faculties, the Brain must grow weak, and fall into a State of Thoughtlessness and Inactivity, dispo-
 The

By their
 comes more debilitated; and those rectimen-
 tion. I must be from it, that Exercise would
 show off through the proper secretory Organs,

The Cure is attempted by
 The Cure. whatever rouses the Spirits;
 bleeding in the Jugular, quick
 Purges, Sternutories, Veficatories, *Acu-Puncture*.
Seton, Fontanels, and sudden Plunges into the
 Sea; the latter is most effectual when the Dis-
 temper is new, and the Patient as yet not
 attended with a drivling at Mouth and Nose.

The *Croakra* (so called by the
 The Second Negroes) is a cutaneous Distem-
 Distemper is per, somewhat like, but not so
 the *Croakra*. inveterate as our Itch, being large
 Blotches and Blains dispersed up

and down, and seem to arise on Board Slave-
 Ships from a sudden Change to an unusual and
 coarse, if not a salt Diet; contributing to which,
 perhaps, may be a Neglect and Carelessness in
 drying the Skin in warm Suns, after it has been
 wet with Salt-Water: It is true, they do not
 so soon feel the Effect, but Repetition in the
 End has its Share in helping to fret and chap
 the Cuticle in this Manner; at least, I imagine
 so, because refraining from Salt Food, using
 Baths, and feeding them wholly on Rice, Fa-
 rine, and Beans, (the common Victualling,)
 does, together with constant basting in of Palm
 Oil, generally smooth and dry it again. Where
 this latter Practice obtains most, (*viz.* the wind-
 ward Part of the Coast,) there they are the least
 troubled with these Eruptions; and where the
 Custom is more intermitted, (or salted Tallow
 used instead,) it becomes more frequent.

In speaking to the dis-temper-
ed Skins of *Africans*, it falls na-
turally in the Way, to subjoin
a Word or two of their Co-
lour.

The Negro
Colour ex-
tremely diffi-
cult to account
for.

From the River *Senega* in
Africa, 15° N. to almost its
Southern Extremity in 34° they are all black
and woolly, the natural Cause of which, must
ever perplex Philosophers. I know *Malpighius*,
and from him others, ascribe these different Co-
lours in Men to a Tinge from that reticular
or mucous Substance under the Cuticle, not
considering the Question as strongly returns;
How even that should become so oppositely co-
loured as it does, in this remarkable Division
of Mankind into Blacks and Whites? The
Gradations *Europeans* make towards a Mulatto
Dye, seem well enough solved from the Fine-
ness of their Skins, and Approaches to the Sun,
whose Heat, more or less, easily eliminates the
thick Parts of that Mucosity, and leaves the Re-
mainer dark; as the clearest Liquors, they say,
will have some Sediment; but how so entire
and opposite a Change is made, as in Negroes,
is not so soon answered. There are these Ob-
jections, *First*, that the Proximity of the Sun,
has not the same Influence on other Animals
in *Guiney*, nay, *their Sheep have Hair* contra-
ry to that closer Contexture of the Skin, which
is supposed to contribute to the Production of
Wool in the human Species. *Secondly*, no
European totally changes by length of Cohabi-
tation with them, neither in Generation begets
a Black, but a Mulatto, not a woolly, but hairy
Race,

Race, which ever remain so. *Thirdly*, the Palms and Soles of Negroes Feet, by Friction and constant Use, become whiter than other Parts; so does the Cuticle, supplied in other Places of the Body, after Scalds, or being otherwise peeled off; which could not well be, methinks, if the Colour of it were owing to the aforesaid Mucosity, unless Nature be allowed to take partial Methods in tinging of it. *Fourthly*, *Americans*, or other Nations in the same, or Parallels of Latitude, where the Sun equally influences, are not black: And, *lastly*, even in this *Negroland*, there are a Race of a bright * yellow Colour, as though painted. I saw one of these in the next Town above King *Pedro's*, in *Rio Sestbos*, who was woolly, and in every Respect else a *Negro*, (pardon the Impropriety,) but in Colour; and know there have others been seen (though rarely) at other Parts of the Coast.

From the Whole, I imagine that White and Black must have descended of different Proto-plasts; and that there is no other Way of accounting for it.

The Yaws.

The Yaws
common a-
mong the Ne-
groes.

Yaws is their general Name for the Venereal Distemper in all its Stages, whether it be from the sparing and necessitous Circumstances they live under at Home, or a better Salubrity of Air, or both, the Malignancy

Mr. *Thompson* in the Slave-Trade assures me, he saw one of this Colour at *Angola*, and another at *Madagascar*.

lignancy is commonly better subdued, and the Symptoms kept from raging in that unhappy Manner we find with us, who aggravate the Infection with Irregularities and unskillful mercurial Processes; which the Negroes sometimes experience also, when they leave their own Country, and unluckily launch from Hunger and Temperance to Plenty, and a Liberty of satisfying their greedy Appetites, especially with strong Liquors; then we may see among them (particularly in the *West-Indies*,) very ghastly Spectacles, Eruptions, Tumours, Blotches, and Ulcers, chiefly of the Face and Head.

I should descend more particularly to the Nature and Cure of this Disease among Negroes, did not the Similitude rank them with our Pox and Clap, of which, as I have already treated in a Chapter, shall only here take notice in general, that Mercurials more easily take Effect with them than in northern Constitutions and Climates.

Chicoes.

Chicoes, or Worms, is another Distemper common with them, *Chicoes*, though not so properly said to be peculiar. * *Mr. Jenkinson* in his Journey from *Moscho* to *Boghar* in *Persia*, (28° N.) says, they were bred in the Legs there to an Ell long; and ascribes the Cause to drinking unwholsome River Water. *Dr. Freind*, in his Letter to *Dr. Mead* about the ancient History of Physick, takes notice from some *Greek* Authors, that the *Æthiopians* (Inhabitants on the South-East Part

O 2

of

* *V. Harris's Voyages.*

of *Africa*) were subject to breed Worms in their Arms, Legs, and Thighs.

The Philosophical Transactions have a Relation from our Factory of *Fort St. George* in *East India*, of Worms breeding there in divers Parts of the Body, of various Lengths, some to six or eight Yards; that while breeding, some have lain six, eight, or ten Months lame, sometimes losing their Limbs, and sometimes their Lives; and ascribes the Cause also to drinking the Waters there. And *Knivet's* Voyages, and our own Experience, confirms their Breeding in the *West-Indies*, though smaller and more customarily in their Toes.

I cannot agree to what most Travellers advance (who have visited warm Climates, and mention these Worms) of their being bred from the Seed or Eggs of such Insects swallowed in drinking unwholesome stagnated Waters: Any Thing which has its Original from so cool an Element, in my Opinion, should sooner be stifled and destroyed by the great Heat and concoctive Faculty of the Stomach, or, at least, before that Course of Circulations can be finished, as transmits them to the external Parts, where they increase and maturate: I rather think, since they are only the exposed Parts of the Body, they generate in, ofteneft in the Legs and Feet, and seldom or never in Children nor in those clothed, that they are externally conveyed, and happen from Men's constantly walking and trampling naked in such Waters as contain them.

Among

Among the *Africans* they are found to breed in most Parts of the Body, (and not constantly confined to the Legs and Feet, as in other Climates,) between the Flesh and Skin, are white and slender as a Straw, and draw out perhaps to a Foot and half; I have heard sometimes to an Ell or two long. What Life, or how their Maturity is promoted, I am not able to say; but after Eruption of the Tumor, they are to all Appearance dead.

The Part where the Worm is lodged, gradually tumefies to the Bigness of an Egg, hard and painful, when left to their own Management; and without due Application to assist Nature, they are a Month, two, or three, in suppurating, and then maturate but little. With the Eruption comes out one End of the Worm, perfectly inanimate, which they haul out gently an Inch or two every Day, breaking off the perished Part (without) as often, and cover the Wound with nothing but a Bit of Linnen to hinder any ill Effect from the Air or Cold, embrocating with a little Palm Oil: As the Worm is expelled, the Pain and Tumor abate.

English Surgeons do sometimes take a more improper Way: Impatient of waiting for this natural Expulsion by Suppuration, they open the Tumor, which is sure to make several Ends, any of which is frivolously accustomed to be rowled on a small Stick daily; whence a greater Indigestion happens, and an Aggravation of the Symptoms.

However, applying a Pledget of *Basilicon*, an Emplaister over, and Compress, with the *Creeping Bandage*, (that is, at every Circumvolution leaving a Space, particularly at the Tumor,) the Worm gradually draws away, digests, and heals.

F I N I S



E R R A T A.

PAGE 35. Line 23. read p. 42. p. 48. l. 16. dele *Vide Appendic.*
 p. 61. l. 2. r. *Efflu.* p. 76. l. 1. d. whole. p. 94. l. 2. for
 26. r. in. p. 96. l. 30. r. *Ligamentum*. p. 115. l. 22. for
 know, r. *gnav.* p. 116. l. 4. r. *Aquapendente*. Ibid. l. 18.
 r. *Constringens*. Ibid. l. 24. r. *contab.* p. 118. l. 17. d. which,
 p. 119. l. 11. d. the Comma at *Arterial*. p. 128. l. 8. r. *Hy-*
persarcosis. p. 135. l. 16. for *or*, r. *Ol.* p. 142. l. 15. for
Ulceration, r. a soft anointing. p. 147. l. 18. r. *Glutoul.* p. 170.
 l. 8. add Dr. Turner cites *Serjeant Bernard for the same Case*.
 p. 171. l. 18. d. *lastly*. p. 190. l. 17. r. *Sirumas*. Ibid.
 l. 28. r. *Aq. Carminat.* p. 191. l. ult. r. *capit.* p. 201. l. 1.
 r. *Itack*. p. 203. l. 30. d. *Cotton and.* p. 212. l. 6. for *as*,
 r. *an.* p. 230. l. 7. r. *infillat.* p. 233. l. ult. r. *vivum*. p. 239.
 l. 2. r. *cleanse*, r. *Glands*.

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